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## The Arthur Wilson Memorial Lecture.<sup>1</sup>

### FRIENDSHIP IN MEDICINE.

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I FEEL it a great honour to have been asked to give this, the third Arthur Wilson Memorial Lecture, in the centenary year of the great hospital which he so signally adorned. I find myself sharing the doubts of my friend Arthur Gemmell, the first lecturer, whether anyone who did not know Arthur Wilson can do justice to his memory; but I am here to do my best.

You will, I believe, not expect me to pinpoint his career in the way the first lecturer very properly did; but something I must say about his personal and professional qualities. Soon after I knew I was to speak today, I approached a friend of mine at home who knew Arthur Wilson and his work well. He emphasized his integrity, his modesty and his power of influencing those round him. His practice was enormous, but in spite of this his

colleagues loved him. His main interest, as most of you will know, was obstetrics, and he had a strong leaning to conservatism. Reading further about Arthur Wilson and pondering on what I read, I was struck by the friendliness of his character. Another obstetrician to whom I mentioned my suggested subject wrote: "Arthur Wilson was a friend to all his patients, and those who called him in as a consultant felt he was their best friend coming to help them in a difficulty, even if they hardly knew him before." It therefore occurred to me that I should be in tune with him if I made my subject "Friendship in Medicine".

I want to speak of three varieties of friendship that the doctor may give or receive as he goes about his task. The first is that general feeling of friendship for the human race which frequently constitutes vocation for medicine—the desire for service that the would-be medical student often gives, and I think often truly gives, as his reason for wishing to join our great profession. It is pictorially represented in the nurses' badge of one of the great English provincial hospitals, the Manchester Royal Infirmary. It is a medallion of the Good Samaritan, with the words in Latin: "Go and do thou likewise." We in the medical profession no less than the nurses should be Good Samaritans.

The first verse of a poem called "Hospital", written many years ago by Walter de la Mare, seems to me to convey an idea that we who work in hospital should always be bearing in mind. The poet is addressing a hypothetical patient:

<sup>1</sup> Delivered on August 22, 1956, at Melbourne, under the auspices of the Arthur Wilson Memorial Foundation.

Welcome! enter! this is the Inn at the Cross Roads.  
Sign of the "Rising Sun", of the "World's End".  
Ay, O Wanderer, footsore, weary, forsaken,  
Knock! and we will open unto thee—Friend.

This is the ideal of service in words.

The lives of some of the greatest doctors have been one long act of compassion, and I want to mention two doctors whose compassionate hearts seem to have guided them in the work which made them famous.

These compassionate hearts tend to concentrate on one special object. For David Livingstone (1813 to 1873) it was Africa. He qualified at Glasgow, after a "viva" in medicine in which he stubbornly defended views of his own on the stethoscope against his examiners—and passed. He was ordained in London the same month and was soon en route for Africa to work in the mission field, at first with the London Missionary Society. On his way out to Africa the master of the ship, Captain Donaldson, taught him navigation—a skill which he put to good use later in life. He followed the method of Saint Paul; that is, he went to a town and established a centre there, converting the inhabitants. Then he would move on elsewhere, leaving behind him native Christians to carry on his work. We know him best as an explorer and as the great antagonist of the slave traffic. He explored a vast tract of the continent in three missionary journeys, like his great predecessor—first, with a minimum of helpers travelling hundreds of miles to Loanda in Portuguese West Africa, then going over to the coast in Portuguese East Africa, and finally proceeding on the journey on which he died, when he was trying to find the watershed between Nyasa and Tanganyika. Among his notable discoveries were the Victoria Falls on the Zambesi and many of the great lakes. It is not easy to sum up his achievement in a few sentences. In July, 1868, for instance, he was surrounded by a horde of hostile and intoxicated savages, threatening him and his party with spears, battle-axes and bows and arrows. Livingstone sat perfectly still, showing not the slightest fear, and this probably saved him and his little band from massacre. The companion of some of his travels, Sir John Kirk, writes of him:

Like many strong natures, he was capable of very deep tenderness, especially for the weak and helpless both of the human and subhuman creation . . . and could be roused to a fury of moral indignation by . . . cruelty and injustice.

Between his second and third journeys, with a crew of three white men and a few natives he sailed his little boat, the *Lady Nyassa*, across the 2500 miles to Bombay to sell her. The people of Bombay subsequently subscribed for his third missionary journey as much as was provided by the British Government and the Royal Geographical Society put together. Livingstone died near Lake Bangweolo in what is now Northern Rhodesia.

Van der Post, in his book "Venture to the Interior", reports what Peter Gracey, a District Commissioner in Nyasaland, said not long ago of David Livingstone:

The more he knew the Africans, the more impressed he was by the fact that when Livingstone died his bearers carried his dead body for hundreds of miles through hostile, dangerous country to the coast. It was a deed so remote from their normal state of being that he never ceased to wonder at it. Years ago he met a very old native who remembered seeing Livingstone standing in the lake washing. When he lathered his head the old man said they all ran away because they thought he was a wizard taking his brains out. Yet with all that sort of superstitious ignorance about him, he captured their imagination to such an extent that, dead, he still urged his servants on. This was the real measure of the quality of his greatness.

Livingstone in his thirty years' work revealed more African geography than any other single man. After his first great journey he was made a Fellow of the Royal Society for his work, not merely in the geographical field, but in botany, zoology and palaeontology. But it was as a moral force that he was supreme. "To this day", wrote Campbell in 1929, "connection with Livingstone is an open passport through Africa", and this was essentially due to

his character. What he said and what he did followed the same unswerving line of rectitude.

Love of the human race was the chief motive in determining James Young Simpson (1811 to 1870), of Edinburgh, to take up the healing profession. Edinburgh, you see, as well as Melbourne, had a famous Simpson. Women in labour were the special object of his compassion. It is difficult for us after over a century of anaesthesia in surgery and obstetrics to realize what women and men had to endure before the introduction of ether and chloroform. The feelings of the patient have never been more graphically or poignantly described than by a doctor who had undergone an amputation in those pre-anaesthetic days. I give you an oft-quoted passage from a letter of this man, George Wilson, to Simpson:

Before the days of anaesthetics, a patient preparing for an operation was like a condemned criminal preparing for execution. He counted the days till the appointed day came. He listened for the echo on the street of the surgeon's carriage. He watched for his pull at the door bell; for his foot on the stair; for his step in the room; for the production of his dreaded instruments; for his few grave words, and his last preparations before beginning. And then he surrendered his liberty, and revolting at the necessity, submitted to be held or bound, and helplessly gave himself up to the cruel knife. The excitement, disquiet, and exhaustion thus occasioned, could not but greatly aggravate the evil effects of the operation, which fell upon a physical frame predisposed to magnify, not to repel its severity. To make a patient incognizant of the surgeon's proceedings, and unable to recall the details of an operation, is assuredly to save him from much present and much future self-torture, and to give to him thereby a much greater likelihood of recovery.

It is difficult, too, for us to imagine an era in which after a long labour a woman, far from welcoming, would shrink from the application of forceps, because of the fear or the knowledge that the pain of giving birth to the child would be increased to the point of torture. In those days the performance of Caesarean section was virtually a death warrant, and the incidence of rickets and therefore of pelvic contraction was many times higher than it is now; thus it happened that countless obstetric operations of great technical difficulty were carried out with the patient fully conscious.

Either came to us from America, and within three months of its first use in a surgical operation in the Massachusetts General Hospital in October, 1846, Simpson was using it for his maternity patients in Edinburgh. Later in the same year he became the first to use chloroform as an anaesthetic; this happened at the birth of a daughter to Dr. and Mrs. Carstairs, of Edinburgh. We may perhaps reckon this little girl not too fortunate in being on this account baptised "Anaesthesia". Her photograph used to stand on Simpson's desk. "Anaesthesia", by the way, was the term suggested by one of our other heroes of tonight, Oliver Wendell Holmes.

There was considerable opposition to the introduction of anaesthesia into surgery, and Simpson entered with enthusiasm and success into the fight for it. But his professional opponents were even more vehement and bitter in their antagonism to the relief of pain in obstetrics. They raised medical, moral and religious objections to the practice, all of which Simpson, with his love of battle and skill in polemics, dealt with faithfully. Simpson was not the only one of our friendly people who also possessed "the gentle art of making enemies". Unlike Morton, who probably more than any other man deserves the credit for the introduction of ether, and who wished to patent his discovery, Simpson did his utmost to disseminate knowledge about chloroform, so that every member of the profession should be able to use it for the relief of his patients.

The chief joy that he derived from becoming wealthy was in the power it gave him to help others, young men starting on their medical careers, those in want, and even sometimes queer people who thought themselves on the verge of some great discovery—one, for instance, who needed only a little more capital to find the philosopher's stone.

Simpson was very unmethodical in his practice; he never used a visiting list, but relied on his phenomenal memory to keep him right. He frequently omitted to send receipts. We are told the following story:

Once a ten pound note was forwarded to him by a man who might more reasonably have paid one hundred pounds. The note was somewhat carelessly not acknowledged, and the sender kept writing letters demanding an answer in increasing severity of tone. But he was left to rage in vain. A few nights later Simpson's sleep was disturbed by a rattling window; in the dark he rose and groped for a piece of paper wherewith to stuff the chink and stop the irritating noise. His only comment next morning when his wife, having removed the paper and discovered its nature came to him with it, was "Oh, it's that ten pounds!"



FIGURE I.

David Livingstone in consular dress.

After his death a medical meeting called in Washington passed a resolution "that in Dr. Simpson, American physicians recognise not merely an eminent and learned Scots practitioner, but a philanthropist whose love encircled the world—a discoverer who sought and found for suffering humanity in its sorest need a foretaste of the peace of heaven".

I have chosen to represent the friendly people with a coterie of friends outside the profession by two very different men, Oliver Wendell Holmes (1809 to 1894), of Boston, and Edward Wilson (1872 to 1912), of the Antarctic. Holmes, as many of you will know, was by no means without distinction inside the profession. He wrote a famous paper on "The Contagiousness of Puerperal Fever", published in 1843, and four years later he was appointed professor of anatomy and physiology at Harvard

University, with duties in other departments too; this led him to say that he occupied "not a chair but a settee in the school". He continued to give the anatomy lectures until 1882.

Holmes is his own best biographer, for much of his life, ideas and actions are described in the "Breakfast Table" books. He was a great talker. "I continued", he wrote in "The Autocrat of the Breakfast Table", "for I was in the talking vein." Edmund Gosse writes:

Perhaps no man of modern times has given his contemporaries a more extraordinary impression of wit in conversation. We are told that he never overpowered his companions, never talked in monologue, but that he listened as brilliantly as he spoke, taking up every anecdote, rippling over with an illuminated cascade of fancy and humour and repartee.



FIGURE II.

Sir James Young Simpson.

Holmes did on occasion suspect himself of taking rather more than his fair share of the conversation. Unrecorded talk is evanescent, and it is difficult to conjure up just how he entertained his fellow-members of the Saturday Club of Boston at those dinners which were the chief pleasure of his life. We are asked to believe that he talked even better than he wrote, and this is a taste of his writing.

One morning in the "Autocrat" he said at the boarding-house breakfast table:

It is not easy at the best for two persons talking together to make the most of each other's thoughts, there are so many of them . . . when John and Thomas, for example, are talking together, it is natural enough that among the six there should be more or less confusion and misapprehension. . . . I think I can make it plain . . . that there are at least six personalities distinctly to be recognised as taking part in that dialogue between John and Thomas.

Three Johns.

1. The real John; known only to his Maker.
2. John's ideal John; never the real one and often very unlike him.
3. Thomas's ideal John; never the real one, nor John's John, but often very unlike either.

Three Thomases.

1. The real Thomas.



## 2. Thomas's ideal Thomas.

## 3. John's ideal Thomas.

A very unphilosophical application of the above remarks was made by a young fellow answering to the name of John, who sits near me at table. A certain basket of peaches, a rare vegetable, little known to boarding-houses, was on its way to me via this unlettered Johannes. He appropriated the three that remained in the basket, remarking that there was just one apiece for him! I convinced him that his practical inference was hasty and illogical, but in the meantime he had eaten the peaches.

The Saturday Club included all the literary talent of Boston—and what talent in those days it was! It included among others Emerson, Nathaniel Hawthorne, Lowell, Motley, Longfellow, Whittier. Osler called Holmes "the

He did not react favourably to this. In writing to the girl he married later he said:

I can't bear people who always take for granted that one's main object is to save up one's health and strength, eyesight and what not, for when one is sixty. How on earth can they tell whether one is going to reach thirty? I think it's better to wear a thing while it's good and new, patching the odd corners as they wear out, instead of putting it away carefully year after year till at last the moths get in, and you find it's no good when at last you think you will wear it.

Wilson went on all the three most severe treks of both Scott's expeditions, being the only man to do this. In the first, "the Southern Expedition", he and Scott, in the face of tremendous difficulties, and both suffering from scurvy, saved the life of Shackleton, who was very ill with cough



FIGURE III.  
Oliver Wendell Holmes.

most successful combination the world has ever seen of physician and man of letters", and Lowell wrote of him as follows:

This Holmes, who is matchless among you for wit  
Full of fancy, fun, feeling or spiced with satiric  
In a measure so kindly, you doubt if the toes  
That are trodden upon, are your own or your foes.

Edward Adrian Wilson (1872 to 1912), second in command and chief of the scientific staff in Scott's magnificent but tragic Antarctic expedition, was the second son of Dr. Edward Wilson of Cheltenham, and had Quaker ancestors on his father's side. He developed tuberculosis at the age of twenty-six years, and made his first journey to the far south in the *Discovery* with Scott, when he was barely convalescent from this. He wrote later:

I can't help thinking that my experience would be very encouraging to many others who begin life by catching phthisis. It shows that it in no way unfits one for roughing it in very trying conditions.

He was doctor, explorer, artist, ornithologist; he had a special affection for the grace, suppleness and swiftness of the birds of prey; but it was as a man that he was supreme.

When he left Davos in 1899, his medical advisers recommended him to take a sedentary life as a medical artist.



FIGURE IV.  
Dr. Edward A. Wilson.

and hæmorrhage. The second severe trek, and the first of the second expedition, was the "Winter Journey", undertaken by Wilson with Bowers and Cherry-Garrard in 1911. This was described by Scott in his diary as "the hardest journey that has ever been made"; nothing on the Polar journey itself, which Wilson undertook with Scott, Bowers, Evans and Oates, provided more terrible conditions. You will remember that first Evans and then Oates died on the return journey from the Pole, and the three men who were left perished together of starvation and exhaustion, 11 miles short of the depot where they would have found ample supplies of food.

These men were all friends. Edward Wilson, though social gatherings were pain and grief to him, was devoted to his colleagues in the expeditions, as they were to him. One of them, writing afterwards, spoke of "the harmony which will always remain one of the chief features of Scott's last expedition", and this was attributed largely to Wilson. In any trouble or difficulty, the wardroom catchword was always "Ask Uncle Bill". Cherry-Garrard, in his book "The Worst Journey in the World", writes:

If I were asked what quality it is before others that made him so useful and so lovable, I think I should answer that it was because he never for one moment thought of himself.



In addition to courage, and unselfishness, and physical fitness, he had the faith that what he was doing was worth while. Again, Cherry-Garrard writes:

You must not think of him as a religious man. It has come almost as a shock to some of us to learn now for the first time that he held a service to himself up in the crow's nest every week. But after reading some of these letters I begin to realize why Bill made no comment when, after years of preparation and months of racking toll he reached the Pole only to find that the Norskies had been there first.

His last letter to his wife says: "My only regret is leaving you to struggle through your life alone, but I may be coming to you by a quicker way." Sir Arthur Shipley, Master of Christ's College, Cambridge, Wilson's university, writing on him in *The Cornhill* afterwards, ends his article with these words: "Of his own death I cannot write. Browning foresaw it." This is an allusion to these lines:

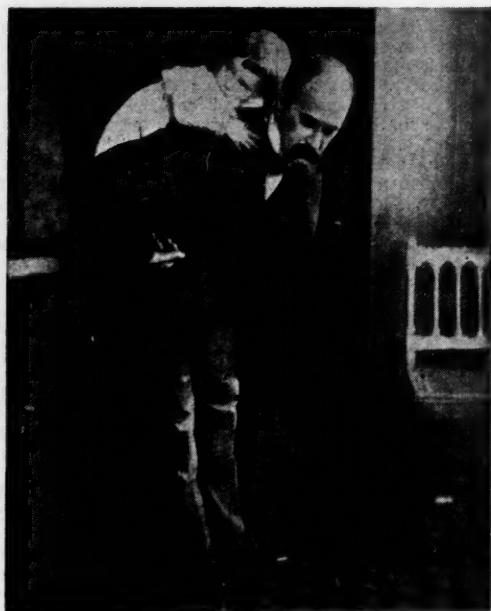


FIGURE V.

Sir William Osler. ("And on his shoulders, not a lamb, a kid.")

I was ever a fighter, so—one fight more,  
The best and the last!  
I would hate that death bandaged my eyes, and forbore,  
and bade me creep past.  
No! let me taste the whole of it, fare like my peers  
The heroes of old,  
Bear the brunt, in a minute pay glad life's arrears  
Of pain, darkness and cold.  
For sudden the worst turns the best to the brave,  
The black minute's at end,  
And the elements' rage, the fiend-voices that rave,  
Shall dwindle, shall blend,  
Shall change, shall become first a peace out of pain,  
Then a light, then thy breast,  
O thou soul of my soul! I shall clasp thee again,  
And with God be the rest!

But Wilson was human as well as heroic.

While he was at Cambridge there was a famous trout which lived near Grantchester Mill, and which had resisted the efforts of many fishermen to catch him. Wilson had the idea that he might be caught in the small hours. One night, just after May races in 1893, he slipped out of College, caught the trout, and in his enthusiasm sent it as a gift

to the Master of the College. The Master sent for him to thank him, and heard the story of the catch. He was a strict disciplinarian with a high-pitched squeaky voice.

"But Mr. Willson, you were out of the College at three in the morning?"

"Yes", said Willson.

"You had leave, no doubt?"

"No", said Willson.

"Then I am afraid I must send you down."

And sent down for the rest of the term he was, though Dr. Roberts, the senior tutor, pleaded hard for him.

Edward Wilson, your Arthur Wilson's namesake, was a most noble character.

The third variety of friendship I wish to discuss is friendship within the profession. Let me allude to three men who by their lives and work did much to bring doctors together in friendly relationship—Osler, a great physician, Moynihan, a great surgeon, and Blair Bell, a

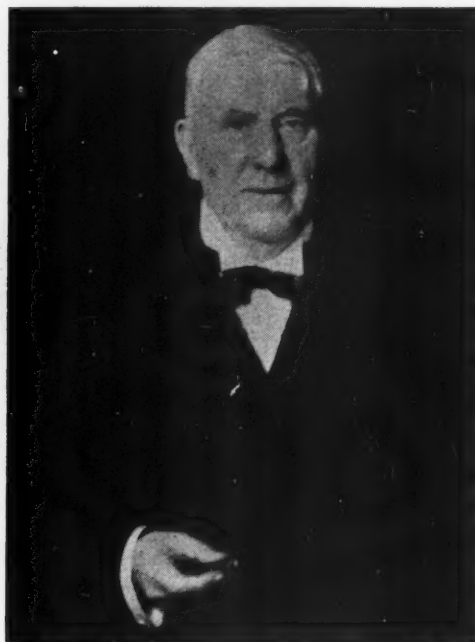


FIGURE VI.

Lord Moynihan.

great gynaecologist. These three, differing widely in personality, had in common the feeling that the bonds between the members of their various specialties needed strengthening.

William Osler (1849 to 1919) was Canadian born, sixth son of the Reverend Featherston Osler. The family was of Cornish origin. Osler was trained at McGill University, and subsequently held chairs of medicine at Philadelphia University and at Johns Hopkins University. From Baltimore he accepted the Regius Professorship of Medicine at Oxford University, where he spent the last fourteen years of his life. At Johns Hopkins University he was associated with Welch, professor of pathology, Halsted, professor of surgery, and Kelly, professor of gynaecology, and these four were known as "the Big Four". Osler had a photograph of the three of them who were clinicians, whom he pictured as the three Fates. This is appropriately indicated. Sargent painted a famous portrait of the Big Four while they were over in England in 1905.

Osler was a supremely distinguished physician, and perhaps the greatest personality in the medical world at the

time of his death. He believed firmly in societies and associations of medical men. At the centennial celebration of the New Haven Medical Association he said: "This Society was . . . designed . . . to lay a foundation for that unanimity and friendship which is essential to the dignity and usefulness of the profession." He was prime mover in the formation of the Association of Physicians of Great Britain and Ireland in 1906; he founded *The Quarterly Journal of Medicine*; and he was first president of the Fellowship of Medicine, which strengthened the bond between Anglo-Saxon doctors. It was to him in the last year of his life (1919) that the Viennese doctors turned first for help when Vienna was starving, confident that he would regard them not as enemies, but as brothers in the same world-wide profession as himself. Many have testified to his genius for friendship. His house in Oxford was

by a week, at that time not being accustomed to think of evils long in advance. I was naturally somewhat fearful of the fact being ascertained, and first thing the next day Osler asked me about the paper, how it had been accepted, what was the discussion, etc. I rather welcomed the opportunity to get the matter over with and spoke of the enthusiastic reception accorded the paper and gave at some length the discussion upon it. "What did Wilson say?" asked Osler, and I thought it well to put Wilson in opposition and gave as well as I could his opposing argument. "Yes", said Osler, "Wilson spent last night with me and said he immensely enjoyed your paper, but he couldn't quite agree with you."

Besides having a host of grown-up friends Osler was devoted to children. He delighted in books, and one of the things that keeps his memory green in Montreal is the Osler library, watched over still by his nephew, W. W. Francis, and full of treasures.

Egerton Y. Davis used to address Moynihan (1865 to 1936), my next example, as "Carnifex Maximus", that is, "King of the Executioners". It is perhaps as the master abdominal surgeon that he is best remembered. Those who saw him operate will not readily forget the perfection of his technique, the way he caressed the tissues, his speed without hurry, the unruffled calm of his operating theatre. He was a great showman and enjoyed having visitors present at his lists. When I was his dresser in 1923 we never had a Friday afternoon without surgeons present from here, there and everywhere. He often persuaded his distinguished guests to address his students, so that as a student I had the good fortune to hear Willie and Charlie Mayo of Rochester, Crile of Cleveland, Coley of New York, Pauchet of Paris, among others. But Moynihan also loved going to other centres himself,

To watch  
The Master work and catch

Hints of the proper craft, tricks of the tool's true play

as he was fond of quoting from "Rabbi Ben Ezra". Indeed, there were not wanting at the time of his death those who held that his supreme achievement was the breaking down of barriers between one centre and another, and between individual surgeons. Two months before he died, speaking at the Royal College of Surgeons, he said that "it was the lack of unity among surgeons that had led him to the thought of a catalyst in the form of a Journal, and then of an Association". But first in 1909, helped especially by Harold Stiles, Robert Jones and Rutherford Morrison, he founded the Chirurgical Club, which met in the home cities of the various members and abroad, to see operations, to read papers and to hold discussions. Twenty years after its foundation, when Moynihan was raised to the peerage, it changed its name and became the Moynihan Chirurgical Club. He was the leader in the foundation of *The British Journal of Surgery*, and was chairman of its editorial committee from its birth until he died. The writer of the unsigned article in that journal after his death (probably George Gask) testified that this committee had worked in unbroken harmony together under his chairmanship for twenty-three years. Moynihan himself often referred to it as a "band of brothers". In 1920 he again took the lead in the formation of the Association of Surgeons, to knit together more closely the surgeons of Great Britain and the Dominions.

Like our other heroes, he had his lighter moments; he was devoted to swimming, and often bathed twice a day in the open-air pool at Carr Manor, his home. He was fond of contemplating the perfection of his own work. "What a beautiful picture!" he would say, when taking stitches out of a recent incision. "Almost as beautiful a picture", he once said to the Duke of Norfolk, who was one of his patients, "as 'The Hill'." This was the name of a picture recently sold for £87,000 by the Duke. The Duke at once replied: "But not so expensive, I hope."

"Moynihan", so writes one of his dining club friends, "is a bright fountain of refreshment in after-dinner conversation, with a copious play of grace, information, argument, courtesy and wit. His fault on these festal occasions is that competition flies from him." After his thirty-third

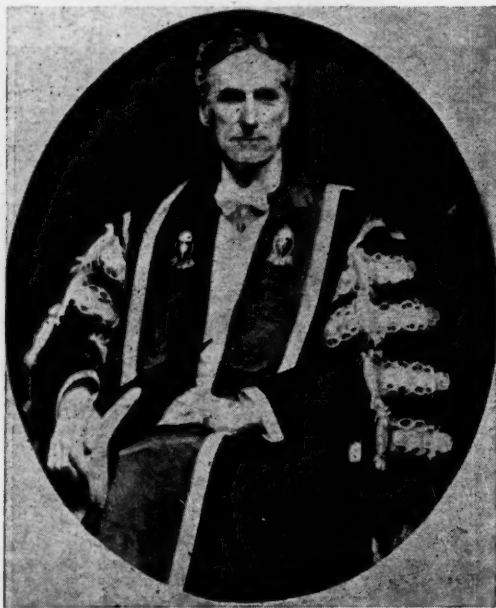


FIGURE VII.  
Professor Blair Bell.

known as "The Open Arms"; it was a place of pilgrimage for all, from medical students upwards. The Golden Rule was the guide for his behaviour towards his professional brethren and patients. Moynihan wrote of him that "hundreds of men in all countries looked upon him as their own particular friend". In every letter he wrote "there was a note of cordial intimacy and affection . . . so that it seemed as though he were spiritually in closest touch with all". He never forgot servants, and they were devoted to him.

Like Barrie, Osler had an irresponsible, bubbling half of his personality, a practical joker called Egerton Y. Davis. Here are two incidents in Davis's career.

Clifford Allbutt was Regius Professor at Cambridge during Osler's time at Oxford. On one occasion they arrived at a reception somewhere in London together and proceeded up the stairs arm in arm. When they reached the room, the irrepressible Osler whispered a few words to the usher who announced in stentorian tones, "The Brothers Regil". They then advanced together and made a low stage bow.

W. T. Councilman, in Osler's memorial volume, records this story from Johns Hopkins days:

I remember once that I had gone to Philadelphia to read a paper on a subject in which we were all interested, but unfortunately I had mistaken the date

birthday he never smoked again, because he thought smoking impaired his efficiency as a surgeon. He was very proud of the fact that his father was in the first list of Victoria Crosses ever awarded. On the anniversary of the taking of the Redan at Sebastopol, September 8, when this Cross was won, the table centre was always laid out with red roses in the form of the Victoria Cross by his daughter, Dorothy.

Blair Bell, a great man from our own specialty, famed for his work on the pituitary gland and for his research on cancer, was the father and founder in 1911 of the first itinerant body of gynaecologists to be formed at home. "For the first time", one of Blair Bell's obituary notices says, "gynaecologists from all over the country in an informal atmosphere got to know one another. Views were exchanged, friendships made and a corporate spirit acquired." This body, to which I have had the honour to belong for the last twenty-one years, is called the Gynaecological Visiting Society. We have usually met in a university centre twice a year, once at home and once abroad. To my biased eyes this society appears to be the supreme example of "friendship in medicine". In America, for instance, we met with wonderful hospitality and made many friends, but we also had a great opportunity, which we took, of binding more firmly our links with each other.

The Gynaecological Visiting Society has been the forerunner of two other British associations of gynaecologists, the Club and the Travellers.

It was among the members of the Gynaecological Visiting Society, as Fletcher Shaw tells us in his book "Twenty-five Years", that the idea of a College of Obstetricians and Gynaecologists was born. The birth of the college, a Commonwealth-wide and powerful influence for unity among gynaecologists, took place, as many of you know, in 1929, and Blair Bell was the first president. With a brilliantly original mind he combined a dignified presence and a love of ritual. One of his successors in the Liverpool chair wrote of him as "the perfect host, the lover of animals and the friend of children".

Blair Bell's name is perpetuated in the College by the eponymic lectures normally given by a Member of the College, or a Fellow of less than two years' standing. However, when Bruce Mayes was over as Sims-Black Professor, a special dispensation allowed us to hear him discourse delightfully in a Blair Bell lecture on sartorial perfection and other things.

To these three men, Osler, Moynihan and Blair Bell, as much as to any, we owe the knitting together of the profession among the English-speaking peoples. Directly or indirectly they may well have acted as a stimulus to Sir Arthur Sims and his daughter, Mrs. Black, when they generously founded the Sims-Black Travelling Professorship of the Royal College of Obstetricians and Gynaecologists. The professorship is awarded every two years, to a man either from the Dominions or from the home country; the first award was to G. F. Gibberd of Guy's Hospital, the second to Bruce Mayes of Sydney, and this year by an innovation awards have been made to both Macafee of Belfast, who has visited Africa, and myself. This chair, I hope and believe, greatly promotes friendship in medicine.

To Arthur Wilson, a great friend to mankind, I think all my examples of friendship in medicine might well have appealed.

In conning the literature for this lecture I came across what I thought was an apt quotation in THE MEDICAL JOURNAL OF AUSTRALIA in 1955, from Thomas Vicary, Sergeant Chirurgion to Henry VIII:

They [that is, surgeons] must also be gracious and good to the poor and of the rich take liberally for both. And see they never praise themselves for that redoundeth more to their shame and discredit than to their fame and worship. For a cunning and skilful Chirurgion need never vaunt of his doings for his work will ever get him credit enough. Likewise that they despise no other Chirurgion without a great cause for it is meet that one Chirurgion should love another as Christ loveth us all.

Many of the great essayists have been attracted to the subject of friendship. Cicero, for instance, writes:

I can only urge you to prefer friendship to all human possessions, for there is nothing so suited to our nature, so well adapted to prosperity and adversity.

The counterpart to this from Francis Bacon is:

This communicating of a man's self to his friends works two contrary effects, for it redoubleth joys, and cutteth griefs in halves. For there is no man that imparteth his joy to his friend but he joyeth the more; and no man that imparteth his griefs to his friend, but he grieveth the less.

On the same subject again, Cicero wrote as follows:

What can be more delightful than to have one to whom you can speak on all subjects just as to yourself? Where would be the great enjoyment in prosperity if you had not one to rejoice in it equally with yourself? And adversity would indeed be difficult to endure without someone who would bear it with even greater regret than yourself.

And Bacon in his quaint way:

A principal fruit of friendship is the ease and discharge of the fulness and swellings of the heart, which passions of all kinds do cause and induce . . . you may take Sarza to open the liver, steel to open the spleen, flowers of sulphur for the lungs, castoreum for the brain; but no receipt opens the heart but a true friend to whom you may impart griefs, joys, fears, hopes, suspicions, counsels, and whatsoever lieth upon the heart to oppress it in a kind of civil shrift or confession.

But let us return to the friend of many of you, Arthur Wilson—the man whose experience was so vast that when the monthly statistics of the Royal Women's Hospital were being read, and it was stated that, for example, 12 breech presentations in *primiparae* had been dealt with during the month, he could say that he had during the same month in his practice dealt with perhaps 15. And an obstetric emergency would always cure the migraine from which he suffered. Let us think of him with the poet:

Fame is a food that dead men eat—  
I have no stomach for such meat.  
In little light and narrow room,  
They eat it in the silent tomb,  
With no kind voice of comrade near  
To bid the feaster be of cheer.

But friendship is a nobler thing—  
Of friendship it is good to sing.  
For truly, when a man shall end,  
He lives in memory of his friend,  
Who doth his better part recall  
And of his fault make funeral.

In conclusion let me say: "If I have done well and as is fitting the story, it is that which I desired; but if slenderly and meanly, it is that which I could attain unto."

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<sup>1</sup> Use has also been made of the "Dictionary of National Biography", the "Encyclopædia Britannica", and numerous articles in the *British Medical Journal*, *The Lancet*, *The Journal of Obstetrics and Gynaecology of the British Empire*, et cetera.



# SURVIVAL CURVES AS A MEANS OF INVESTIGATING CANCER.<sup>1</sup>

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DURING recent decades there has been a number of articles in the literature in which classifications of cancers in terms of grading and staging have figured. This development seems to have been stimulated largely by the rivalry of surgery and radiation as therapeutic agents, for there have been many comparisons of the results of the two forms of treatment within the different classifications which have been devised. Maybe these classifications and comparisons have diverted attention from the more fundamental question of the effect of any one treatment on the course of the cancer process as encountered in the host of which it is, indeed, a part. Discussion of this question presupposes an appreciation of the salient characteristics of the cancer process.

It may seem superfluous to mention that the present-day management of cancer is dominated by two doctrines—namely, (i) early diagnosis and (ii) radical treatment. These doctrines have been established since the turn of the century, when Halstead was working on the radical operation for cancer of the breast. I have not succeeded in finding in the literature of this period any clear formulation of the concepts upon which such doctrines were based. However, certain tacit assumptions are implied—namely, (i) that cancer spreads in a step-wise fashion, and (ii) that the primary lesion is recognizable before metastasis occurs. These ideas may be represented diagrammatically as in Figure I, in which time is shown by the vertical axis. According to this concept, after the

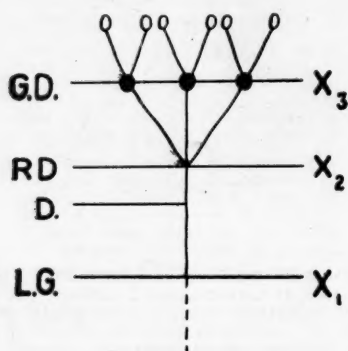


FIGURE I.

Diagram of stepwise cancer spread. L.G., local growth; D., local lesion; RD., regional dissemination; G.D., general dissemination; X, change in tissue properties (consecutive); solid circles, established regional metastases; open circles, established general metastases.

primary lesion has been growing for some time it becomes recognizable locally. Later, metastases spread to the lymph glands, and still later they become recognizable in the lymph glands. In the next stage metastases from the lymph glands are disseminated by the blood-stream generally throughout the body to sites where they subsequently become manifest. In this view the properties of the tumour tissue change three times, first when the neoplasm arises, secondly when it acquires the property of metastasizing via the lymphatics, and thirdly when it acquires

the property of metastasizing via the blood-stream. From these notions of the step-wise spread the concept of staging develops naturally. This article will not concern itself with a discussion of grading.

Dissatisfaction with the results of treatment has intensified efforts directed towards the attainment of the established doctrinal aims, and this follows logically from the assumption set out above. The strivings are for (i) earlier and earlier diagnosis as exemplified by the establishment of cancer detection clinics, and (ii) more and more radical surgery—for example, exenteration of the pelvis for carcinoma of the bladder (Whitmore and Marshall, 1953), the ultra-radical operation for carcinoma of cervix (Morris and Meigs, 1950), and hindquarter amputation for melanoma of the limb (Pack, 1947).

The approach to the cancer problem along the foregoing lines has led to what amounts to a world-wide experiment. The results of this work constitute an observable phenomenon and deserve scrutiny to discover whether results accord with expectations or not. In the latter case they may suggest an alternative hypothesis to that upon which the policy was based.

In Canada there has been a controlled, but perhaps not designed, experiment on the question of early diagnosis extending over the past thirty years. Some Provinces have established cancer detection clinics and some have not. McKinnon has studied the death rates from cancer in the Provinces with and without clinics, and also in the Provinces with clinics before and after the introduction of the said clinics. He was unable to demonstrate any differences in the cancer mortality. Of course, various criticisms have been levelled at these studies; but nevertheless a very strong and disquieting suggestion remains that the attainment of early diagnosis of cancer may not have the slightest effect on the mortality from the disease. I doubt whether there are any other figures in the world bearing on this fundamental point.

It is equally relevant to ask whether the observed results in groups of patients submitted to radical operation match up to expectations. The expectations are, of course, cure, since the operation sets out to eradicate the disease. If the operation was 100% efficient, the expectation of life of patients after operation would be the same as that of the normal population. When patients are followed up it is found that the survival rates at two years, five years and ten years become progressively worse. This suggests the recording of such survival rates yearly to form a curve, and indeed this has been done by the Radium Centre of Copenhagen in the case of carcinoma of the breast (Kaal, 1952). This curve has been constructed for a ten-year period, and the survival rate continues to decline to the end of this period. The continued fall of the curve naturally raises the question: How many survivors would there be after twenty years, or thirty years, or would they all eventually die of cancer? It has been widely held that a person cannot be considered to be cured of cancer until he has died from something else without sign of residual cancer, and that in order to establish these points a post-mortem examination is necessary. It usually turns out that post-mortem examinations are carried out in only a small percentage of the original number of people who come under treatment for cancer, and so valid conclusions regarding the whole group cannot be drawn from these post-mortem data. As will be shown, the results of post-mortem examinations are not necessary, because a satisfactory approach to the question stated above can be made by other means.

Being anxious to construct a survival curve covering a period longer than ten years, I have used the cases of carcinoma of the breast treated by radical mastectomy at the Royal Newcastle Hospital during the years 1935 to 1951. The numerical tabulations used to construct the survival curve can be seen in Table I. The method is that of Berkson and Gage (1950). The graph is shown in Figure II. The curve *p* shows the observed survival of patients treated by radical mastectomy. At zero time the survival is shown at 96% on account of the operative mortality. The form of my curve is generally similar to that given by the Copenhagen Radium Centre, and as

<sup>1</sup> Based on a paper presented at the inaugural meeting of the College of Pathologists of Australia, Melbourne, August 30 to September 1, 1956.

TABLE I.  
Patients with Carcinoma of the Breast Presenting at Royal Newcastle Hospital During the Period 1935 to 1951.<sup>1</sup>

Period After Diagnosis.	Last Heard of Living.	Last Heard of Dead.	Entering Period.	Person-Years of Observation.	Chance of Dying During Period.	Chance of Surviving Period.	Cumulative Survival (p).
Post-operative period ..	23	8	132	132.0	0.0606	0.9394	0.94
After operation (years):							
1 .. .. .	5	16	101	98.5	0.1625	0.8375	0.79
1 to 2 .. ..	5	16	80	77.5	0.2064	0.7936	0.62
2 to 3 .. ..	9	8	59	54.5	0.1467	0.8533	0.53
3 to 4 .. ..	6	4	42	39.0	0.1025	0.8975	0.48
4 to 5 .. ..	4	7	32	30.0	0.2333	0.7667	0.37
5 to 6 .. ..	—	2	21	21.0	0.0952	0.9048	0.33
6 to 7 .. ..	2	—	19	18.0	0.0	1.0	0.33
7 to 8 .. ..	2	1	17	16.0	0.0625	0.9375	0.31
8 to 9 .. ..	2	1	14	13.0	0.0769	0.9231	0.29
9 to 10 .. ..	1	—	11	10.5	0.0952	0.9048	0.26
10 to 11 .. ..	1	—	9	8.5	0.0	1.0	0.26
11 to 12 .. ..	1	—	8	7.5	0.0	1.0	0.26
12 to 13 .. ..	2	—	7	6.0	0.0	1.0	0.26
13 to 14 .. ..	—	—	5	5.0	0.0	1.0	0.26
14 to 15 .. ..	—	1	5	5.0	0.2000	0.8000	0.21
15 to 16 .. ..	—	—	4	4.0	0.0	1.0	0.21
16 to 17 .. ..	1	1	4	3.5	0.2857	0.7143	0.15
17 to 18 .. ..	1	—	2	1.5	0.0	1.0	0.15
18 to 19 .. ..	1	—	1	0.5	0.0	1.0	0.15

<sup>1</sup> All patients were treated with radical mastectomy, some with irradiation as well, either before or after operation.

far as the curve continues—for nineteen years—the survival rate becomes less. Observations mean little

age composition as that of the cancer patients and is calculated from the life table of the Commonwealth Statistician. The method used was to sum the normal expectation of life for one year of each person according to her

TABLE II.

Showing Expected Survival ( $p_e$ ) Calculated from Commonwealth Life Tables for a Normal Population of Same Age Composition as That of the Group of Cases of Cancer of Breast Entering Each Successive Year of Observation; Showing Observed Survival ( $p$ ) in Cases of Cancer of Breast Treated by Radical Mastectomy; Showing "Corrected" Survival ( $p_c$ ) Calculated from the Relationship  $p_c = p/p_e$ .

Period After Diagnosis (Years.)	$p_e$	$p$	$p_c$
0 to 1 .. ..	0.98	0.79	0.81
1 to 2 .. ..	0.97	0.62	0.64
2 to 3 .. ..	0.95	0.53	0.56
3 to 4 .. ..	0.93	0.48	0.52
4 to 5 .. ..	0.91	0.37	0.40
5 to 6 .. ..	0.89	0.33	0.37
6 to 7 .. ..	0.86	0.33	0.38
7 to 8 .. ..	0.85	0.31	0.37
8 to 9 .. ..	0.83	0.29	0.35
9 to 10 .. ..	0.80	0.26	0.33
10 to 11 .. ..	0.79	0.26	0.33
11 to 12 .. ..	0.78	0.26	0.33
12 to 13 .. ..	0.77	0.26	0.34
13 to 14 .. ..	0.76	0.26	0.34
14 to 15 .. ..	0.75	0.21	0.27
15 to 16 .. ..	0.73	0.21	0.27
16 to 17 .. ..	0.71	0.15	0.21
17 to 18 .. ..	0.69	0.15	0.22
18 to 19 .. ..	0.67	0.15	0.22

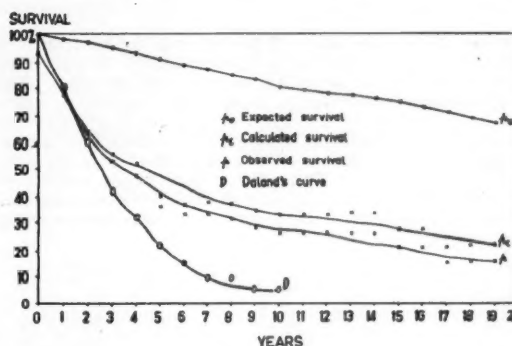


FIGURE II.

Cancer of the breast, Royal Newcastle Hospital, 1935 to 1951.

unless comparisons can be made. The curve  $p_e$  shows the survival rate expected in a normal population of the same

age entering each year of observation. A mean was obtained from this sum. The survival at the end of each successive year is obtained by the continued multiplication of these means. These survivals appear in Table II. It is apparent that the people with carcinoma of the breast—even when

TABLE III.  
Patients with Carcinoma of the Cervix Uteri Presenting at Royal Newcastle Hospital During the Period 1945 to 1950.<sup>1</sup>

Period After Diagnosis.	Last Heard of Living.	Last Heard of Dead.	Entering Period.	Person-Years of Observation.	Chance of Dying During Period.	Chance of Surviving Period.	Cumulative Survival (p).
Post-operative period ..	—	2	62	62.0	0.03	0.97	0.97
After operation (years):							
1 .. .. .	—	19	60	60.0	0.32	0.68	0.66
1 to 2 .. ..	—	13	41	41.0	0.32	0.68	0.45
2 to 3 .. ..	—	4	28	28.0	0.14	0.86	0.39
3 to 4 .. ..	1	5	24	23.5	0.21	0.79	0.31
4 to 5 .. ..	3	3	18	16.5	0.18	0.82	0.25
5 to 6 .. ..	1	2	12	11.5	0.19	0.81	0.20
6 to 7 .. ..	2	—	9	8.0	0.0	1.0	0.20
7 to 8 .. ..	3	—	7	5.5	0.0	1.0	0.20
8 to 9 .. ..	—	1	4	4.0	0.25	0.75	0.16
9 to 10 .. ..	—	—	3	3.0	0.0	1.0	0.16
10 to 11 .. ..	2	—	3	2.0	0.0	1.0	0.16
Over 11 .. ..	1	—	1	—	—	—	—

<sup>1</sup> Patients listed were treated either by radium alone or by radium followed by operation.

treated by radical mastectomy—have a much smaller chance of survival than the normal population, so that radical mastectomy is far from 100% efficient. The question how many of these people have been cured in the sense of complete and permanent eradication of the disease can be approached by means of the "corrected survival curve". This is a mathematical abstraction to show the survival rate of persons from the cancer, all other causes of death being excluded. The method of calculation is quite simple. In a normal population the probability of

TABLE IV.

Showing Expected Survival ( $p_e$ ) Calculated from Commonwealth Life Tables for a Normal Population of Same Age Composition as That of the Group of Treated Patients with Carcinoma of the Cervix Entering Each Year of Observation: Showing Observed Survival ( $p$ ) of Cases of Cancer of the Cervix Treated Either by Radium Alone or by Radium Followed by Operation: Showing "Corrected" Survival ( $p_c$ ) Calculated from Relationship  $p_c = p/p_e$ .

Period After Diagnosis (Years.)	$p_e$	$p$	$p_c$
0 to 1 .. ..	0.98	0.66	0.67
1 to 2 .. ..	0.97	0.45	0.46
2 to 3 .. ..	0.95	0.39	0.41
3 to 4 .. ..	0.94	0.31	0.33
4 to 5 .. ..	0.91	0.25	0.28
5 to 6 .. ..	0.89	0.20	0.22
6 to 7 .. ..	0.87	0.20	0.23
7 to 8 .. ..	0.85	0.20	0.24
8 to 9 .. ..	0.82	0.16	0.19
9 to 10 .. ..	0.81	0.16	0.20
10 to 11 .. ..	0.80	0.16	0.20

surviving is  $p_e$ , the value of which was found from the life tables as above. Let  $p_c$  be the probability of surviving cancer, which is the quantity we wish to calculate. The actually observed survival in cases under review,  $p$ , represents survival from both cancer,  $p_c$ , and the general causes of death,  $p_e$ . The probability of surviving from both simultaneously is the product of the two; thus  $p = p_e \times p_c$ , whence  $p_c = p/p_e$  (see Table II). Thus, if the number of cases under review is large enough, a reliable estimate can be made of the survival from cancer without the necessity

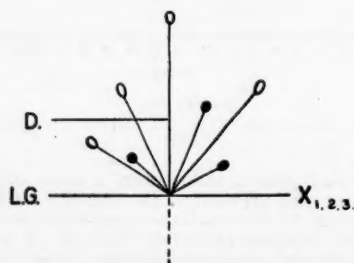


FIGURE III.

Diagram of "explosive" cancer spread. L.G., local growth; D., local lesion diagnosable; X, change in tissue properties (simultaneous); solid circles, established regional metastases; open circles, established general metastases.

of post-mortem examinations or the requirement that death certification be accurate. The only facts required are the date at which the patient came under observation, the date of death and the age of the patient at the original observation.

It is tantalizing that this curve does not proceed further (to expiry, for preference) and with a greater number of cases. With regard to extrapolation, several possibilities may be considered. The first possibility is that the curve  $p_c$  may become flat at about the 20% level. This would mean that after 80% of the patients have died of cancer no further patients die of this disease, and that therefore 20% of the patients have been cured in the sense of

complete and permanent eradication of the disease. It may be remarked that this number corresponds approximately to those found in Stage I. Unfortunately I am unable to state the number considered to be in Stage I in my group; but 20% is at the lower level of estimates (for example, Harnett 24%; Bloom, 30%; McWhirter, 24%; Harrington, 37.1%; Miller and Prendergast, 47.7%).

If only Stage I patients are cured, the radical operation has failed in its object except in the limited group of Stage I cases, and it is clear that similar results could have been obtained by a local or simple excision. Some published figures do, in fact, indicate that survival is just as good after simple or local excision of breast cancer as after radical mastectomy (Lane-Clayton, 1928; Williams *et alii*, 1953; Adair, 1943).

To return to the extrapolation of the curve  $p_c$ , the second possibility is that this curve continues downwards until it reaches zero survival as the trend on the graph suggests it will do. This would mean that no patient has been cured of cancer in the sense of complete and permanent eradication of the disease. Thus, in the two possible continuations

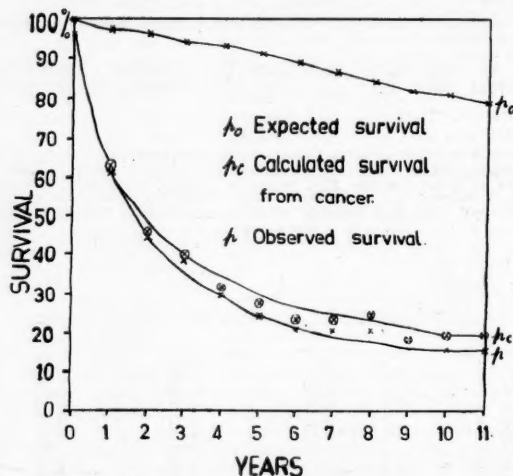


FIGURE IV.

Cancer of the cervix uteri, Royal Newcastle Hospital, 1945 to 1950; treated patients.

of the survival curve, the radical operation is seen either to have been unnecessary or to have wholly failed in its object of complete and permanent eradication of this disease, and surely it should be abandoned. If the survival curve should descend to the zero line, this would also imply that no patient in Stage I has been treated, and this in turn suggests that Stage I may not exist.

If the radical operation fails in its object of complete and permanent eradication of the disease there is room to ask whether the treatment prolongs life. To determine this it would be necessary to compare the crude survival curve with a similar curve of untreated patients. Such published curves are very few. One published by Daland is superimposed on the graph and marked with a D. This curve was constructed from the survival of 100 derelicts in New York who were suffering from cancer of the breast and who had been untreated. It is quite obvious that the Royal Newcastle Hospital survival curve is better than Daland's curve; but unfortunately it is questionable whether that is to be ascribed to the treatment. Amongst derelicts it is to be expected that the death rate would be unduly high from causes such as alcoholism, and it could be that some of the differences between Daland's curve and the Royal Newcastle Hospital curve are due to this additional special cause of death. Daland's curve is constructed from selected bad risk patients and cannot be taken to represent the true survival rate of untreated carcinoma of the breast. The true curve must be some-



TABLE V.  
Cases of Carcinoma of the Cervix Uteri at Royal Newcastle Hospital During the Period 1945 to 1950.

Table VA.—Those not Treated by Radium or Operation.

Period After Diagnosis. (Years.)	Last Heard of Living.	Last Heard of Dead.	Entering Period.	Person-Years of Observation.	Chance of Dying During Period.	Chance of Surviving Period.	Cumulative Survival (p).
to 1 .. .. .	—	12	13	13	0.92	0.08	0.08
1 to 2 .. .. .	—	—	1	1	0.0	1.0	0.08
2 to 3 .. .. .	—	—	1	1	0.0	1.0	0.08
3 to 4 .. .. .	—	—	1	1	0.0	1.0	0.08
4 to 5 .. .. .	—	—	1	1	0.0	1.0	0.08
5 to 6 .. .. .	—	—	1	1	0.0	1.0	0.08
6 to 7 .. .. .	—	—	1	1	0.0	1.0	0.08
7 to 8 .. .. .	—	—	1	1	0.0	1.0	0.08
8 to 9 .. .. .	—	—	1	1	0.0	1.0	0.08
9 to 10 .. .. .	1	—	1	1	0.0	1.0	0.08

Table VB.—Patients Treated by Radium Alone.

Period After Diagnosis. (Years.)	Last Heard of Living.	Last Heard of Dead.	Entering Period.	Person-Years of Observation.	Chance of Dying During Period.	Chance of Surviving Period.	Cumulative Survival (p).
0 to 1 .. .. .	—	19	46	46.0	0.41	0.59	0.59
1 to 2 .. .. .	—	10	27	27.0	0.37	0.63	0.37
2 to 3 .. .. .	—	3	17	17.0	0.18	0.82	0.31
3 to 4 .. .. .	—	1	14	14.0	0.07	0.93	0.29
4 to 5 .. .. .	1	3	13	12.5	0.24	0.76	0.22
5 to 6 .. .. .	—	2	9	9.0	0.22	0.78	0.17
6 to 7 .. .. .	1	—	7	6.5	0.0	1.0	0.17
7 to 8 .. .. .	2	—	6	5.0	0.0	1.0	0.17
8 to 9 .. .. .	—	1	4	4.0	0.25	0.75	0.13
9 to 10 .. .. .	—	—	3	3.0	0.0	1.0	0.13
10 to 11 .. .. .	2	—	3	2.0	0.0	1.0	0.13
Over 11 .. .. .	1	—	1	—	—	—	—

Table VC.—Patients Treated by Radium Followed by Operation.

Period After Diagnosis.	Last Heard of Living.	Last Heard of Dead.	Entering Period.	Person-Years of Observation.	Chance of Dying During Period.	Chance of Surviving Period.	Cumulative Survival (p).
Post-operative period After operation (years):	—	2	16	16.0	0.13	0.87	0.87
1	—	—	14	14.0	0.0	1.0	0.87
1 to 2 .. .. .	—	3	14	14.0	0.21	0.79	0.68
2 to 3 .. .. .	—	1	11	11.0	0.09	0.91	0.62
3 to 4 .. .. .	1	4	10	9.5	0.42	0.58	0.36
4 to 5 .. .. .	2	—	5	4.0	0.0	1.0	0.36
5 to 6 .. .. .	1	—	3	2.5	0.0	1.0	0.36
6 to 7 .. .. .	1	—	2	1.5	0.0	1.0	0.36
7 to 8 .. .. .	1	—	1	0.5	0.0	1.0	0.36

where between Daland's curve and the Royal Newcastle Hospital *p* curve. A satisfactory answer to the question of whether treatment prolongs life in cancer of the breast is not obtained by this comparison.

Perhaps the spread of cancer may be more accurately represented by Figure III than by Figure I. In Figure III the carcinoma is represented as being endowed with the properties of local proliferation and of dissemination via lymphatics and blood-stream from its inception, so that all these properties are acquired simultaneously—in contrast to the concept represented in Figure I. Dissemination is represented as occurring before there is enough proliferation for the lesion to be recognizable locally. It does not necessarily follow, of course, that the metastases are detectable at this stage, any more than the primary lesion is detectable. Such a concept of the explosive spread of cancer denies the existence of Stage I, and satisfactorily explains the failure of early detection to reduce mortality and the failure of radical operation to eradicate the disease completely and permanently. Thus the quest of early diagnosis appears as pointless as the radical operation. Cancer detection clinics could be justified only if it could be proved that distinctly recognizable precancerous conditions existed.

There is a further general question to be asked: Is there any point in removing the primary lesion? It would seem

that the answer to this depends to a greater or lesser degree upon the particular carcinoma under consideration. In some carcinomata—for example, that of the bladder—the local effects themselves can be lethal (the production of pyelonephritis, for instance). In this instance elimination of the primary lesion may well obviate such a fatal complication and prolong life. The same applies to a ring carcinoma of the colon producing obstruction. On the other hand, in the case of carcinoma of the breast, in which death does not seem to follow directly from local causes but rather from the metastases, it may be that the removal of the primary lesion does nothing but remove an unpleasant lesion. However, it is also conceivable that by removing the primary lesion, which is no doubt one source of metastases, life may be prolonged by reducing the metastatic shower. Thus operation is seen in the guise of a palliative procedure rather than in that of a curative procedure. This view has some effect on the definition of operability. If complete cure is the object of operation, the presence of easily seen metastases in the liver in the case, say, of carcinoma of the stomach would be a contraindication to gastrectomy. If, on the other hand, the operation had been undertaken in order to ameliorate the vomiting of the patient, the metastases in the liver would be no contraindication to this procedure and, in fact, it is quite conceivable that the patient's life might be prolonged. Conversely, from the viewpoint of eradication, a tumour may be regarded as operable if by some *tour de force* it

can be "got out", whereas, when viewed from the aspect of palliation, it may be inoperable because of the high mortality to be associated with such an operation.

Crude and corrected survival curves have also been constructed from cases of carcinoma of the cervix treated at the Royal Newcastle Hospital during the years 1945 to 1950. The curves are seen in Figure IV, and the numerical tabulations in Tables III and IV. In this group of cases it is again regrettable that the curve does not continue for a longer period and that more cases are not involved. The patients have been treated with radium (46) or with radium followed by simple total hysterectomy (16), so that the procedures may be expected to eliminate the primary lesion but not metastatic lymph gland deposits. The form of the corrected survival curve,  $p_c$ , is similar to that of the group of cases of cancer of the breast treated by radical mastectomy. It is, however, steeper, and continues to fall to the end of the period of observa-

tabulations are shown in Tables VA, VB and VC. There seems little doubt that patients treated with radium and operation have done better than those treated with radium alone, and that these have done better than those not treated at all. Even though this correlation be established, I think it would be wrong to assume that the better survival is wholly, or even partly, due to better treatment, since there is another possible explanation. Those who were not treated were almost moribund when they came under observation, with the exception of a single long-term survivor who declined adequate treatment, and who, I think, represents an error in histopathological diagnosis. The case is included, as I

TABLE VI.  
Carcinoma of the Cervix Uteri: Royal Newcastle Hospital, 1945-1950.

Duration of Symptoms Before Diagnosis.	Average Duration of Life After Diagnosis. <sup>1</sup> (Months.)	Five-year Survival Rate. Operative Deaths Excluded.
0 to 6 months ..	21	16%
7 to 12 months ..	45	27%
Over 12 months ..	41	33%

<sup>1</sup> Some still living. Operative deaths excluded.

tion (eleven years). It is certainly worse than the expected survival,  $p_o$ , for a normal population. If the true extrapolation should descend to zero survival, this would mean that no patient with cancer of the cervix had been cured, and that presumably Stage I did not exist. Alternatively, the corrected survival curve,  $p_c$ , may flatten out at the last recorded value (20%), which is comparable to various estimates of Stage I—for example, Harnett, 23.5%; Morris and Meigs, 12.8%; Kottmeier, 10.2%. Since metastatic lymph node lesions have not been removed in this group of cases, the latter extrapolation would mean that the step-wise manner of spread existed in the case of cancer of the uterine cervix, and that patients in Stage I had been cured by simple elimination of the primary lesion.

Consider further the case of the extrapolated curve  $p_c$  meeting the zero line. If viewed from the viewpoint of the explosive theory of carcinomatous spread, this survival curve may be considered to indicate a satisfactory standard of histopathological diagnosis in that no "false positives" have been included. If, on the other hand, the curve is viewed from the point of view of the step-wise theory of carcinomatous spread, it may be argued that diagnosis was not early enough and treatment was inefficient.

It is interesting to construct survival curves according to the treatment adopted for carcinoma of the cervix along with an untreated group as in Figure V; the numerical

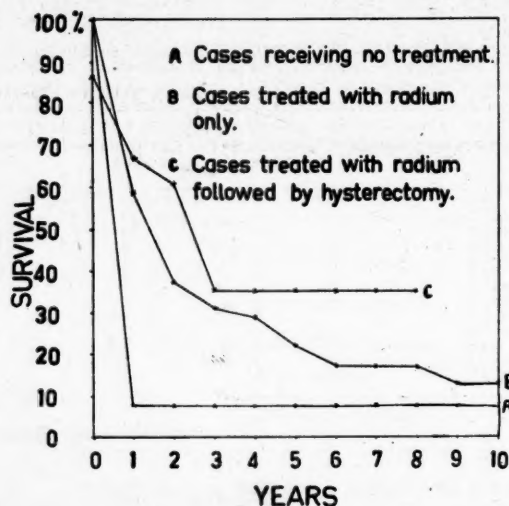


FIGURE V.  
Cancer of the cervix uteri, Royal Newcastle Hospital, 1945 to 1950 (according to treatment).

believe I should make the same mistake again. Those not so obviously ill received radium treatment with a view to subsequent operation if their progress should be satisfactory. Thus, those whose progress was not satisfactory never came to surgical treatment. In other words, the patients have been selected for their mode of treatment by their clinical behaviour over a period of time, and this same passage of time eliminates those with a poor expectation of life from those with a better expectation of life. This interpretation is in line with the fact that those patients whose symptoms were of the longest duration on presenting for treatment lived for the longest period after treatment (see Table VI). The duration of life depends upon the inherent rate of progress natural to any given tumour rather than upon the treatment or the earliness of diagnosis. Furthermore, this interpretation is not incon-

TABLE VII.  
Patients with Carcinoma of the Body of the Uterus Presenting at Royal Newcastle Hospital During the Period 1945 to 1950.<sup>1</sup>

Period After Diagnosis. (Years.)	Last Heard of Living.	Last Heard of Dead.	Entering Period.	Person-Years of Observation.	Chance of Dying During Period.	Chance of Surviving Period.	Cumulative Survival (p).
0 to 1 .. .. .	—	3	23	23.0	0.11	0.89	0.89
1 to 2 .. .. .	—	—	25	25.0	0.0	1.0	0.89
2 to 3 .. .. .	—	3	25	25.0	0.12	0.88	0.78
3 to 4 .. .. .	—	—	22	22.0	0.0	1.0	0.78
4 to 5 .. .. .	5	1	22	19.5	0.05	0.95	0.74
5 to 6 .. .. .	7	2	16	12.5	0.16	0.84	0.62
6 to 7 .. .. .	4	1	7	5.0	0.20	0.80	0.50
7 to 8 .. .. .	—	—	2	1.5	0.0	1.0	0.50
8 to 9 .. .. .	—	—	1	1.0	0.0	1.0	0.50
9 to 10 .. .. .	1	—	1	0.5	0.0	1.0	0.50

<sup>1</sup> All patients treated either by radium alone or by operation alone.

sistent with the view that the primary lesion is endowed with the power of metastasis at its inception. The possible effects of treatment are not needed to explain the difference between the various curves shown. The great variability of the inherent rate of evolution of the cancer process deserves to be kept well in mind.

TABLE VIII.

Showing Expected Survival ( $p_e$ ) Calculated from Commonwealth Life Tables for Normal Population of Same Age Composition as the Group of Cases of Cancer of the Body of the Uterus Entering Each Successive Year of Observation. Showing Observed Survival ( $p$ ) in Cases of Cancer of the Body of the Uterus Treated by Radium Alone or Operation Alone: Showing "Corrected" Survival ( $p_c$ ) Calculated from Relationship  $p_c = p/p_e$ .

Period After Diagnosis (Years.)	$p_e$	$p$	$p_c$
0 to 1 .. ..	0.98	0.89	0.91
1 to 2 .. ..	0.96	0.89	0.92
2 to 3 .. ..	0.93	0.78	0.84
3 to 4 .. ..	0.90	0.75	0.87
4 to 5 .. ..	0.87	0.74	0.85
5 to 6 .. ..	0.84	0.62	0.74
6 to 7 .. ..	0.79	0.50	0.63
7 to 8 .. ..	0.76	0.50	0.66
8 to 9 .. ..	0.75	0.50	0.67
9 to 10 .. ..	0.75	0.50	0.67

The matter of clinical and/or histopathological stages of carcinoma calls for some comment. Statistical correlation has been established between prognosis and the clinical stage as observed at the time when the patient presents. Typical figures are quoted by Donaldson (1952). The concept of the stages has been built on the step-wise theory and is readily understood in this light. As has been

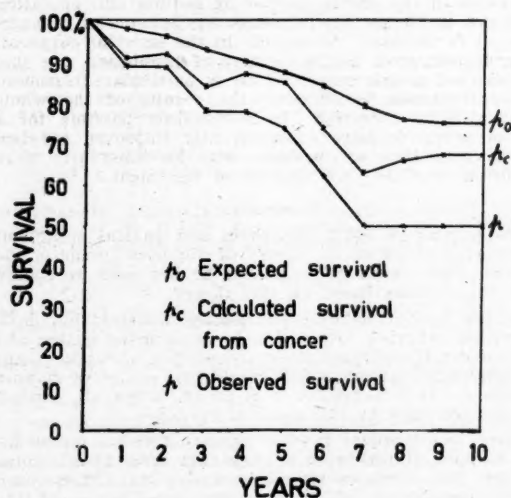


FIGURE VI.

Carcinoma of the body of the uterus, Royal Newcastle Hospital, 1945 to 1950; all cases.

pointed out by McKinnon (1955), there are some features in connexion with the staging of cancer which are rather inconsistent with the simple temporal explanation of the stages. One feature is the fact that the incidence of the later stages does not rise very remarkably with greater duration of the disease, and illustrative figures can be seen in publications by Williams *et alii* (1953) and Donaldson (1952). The correlation given in Table VI is also somewhat inconsistent with the idea of stages following in a time sequence with a good prognosis in "early" Stage I cases. These phenomena and also the correlation of prognosis and staging can be quite satisfactorily explained

on the basis of the explosive theory in the following way. In Stage I the dissemination to the lymph glands is light and proliferation has not occurred to any great extent, and therefore it is not easy to detect metastases microscopically, which are missed; whereas in Stage II the massiveness of dissemination is greater and/or more proliferation has occurred, so that detection is easy. It is clear that the prognosis would be worse in more profusely metastasizing lesions, which would be regarded as Stage II. Thus staging in the temporal sense is a misnomer; "stages" are an index of profusion and proliferation of metastases.

Figure VI shows the survival curves for treated patients presenting at the Royal Newcastle Hospital during the years 1945 to 1950 with carcinoma of the body of the uterus. The numerical tabulations are seen in Table VII. In this instance the crude survival ( $p$ ) is of slower descent than either of the previous two curves. The crude survival  $p$  is certainly worse than the expected survival  $p_e$ . The "corrected survival"  $p_c$  has been calcu-

TABLE IX.

Carcinoma of the Cervix Uteri.

Period After Treatment (Years.)	Royal Newcastle Hospital Survivors (Absolute): Treated Patients.	Hypothetical Survivors (Relative).	Hypothetical Survivors (Absolute).
1	66%	70%	56%
2	45%	50%	40%
3	39%	44%	35%
4	31%	36%	29%
5	25%	34%	27%
6	20%	31%	25%
7	20%	29%	23%
8	20%	25%	20%
9	16%	24%	19%
10	16%	22%	17%
11	16%	20%	16%

lated in the usual way (Table VIII) and the curve is possibly flattening out towards the end of the period of observation. There is no control curve of untreated patients available. If this curve is viewed from the point of view of the explosive theory, it may be said that the histological diagnosis is unsatisfactory in that many "false positives" have been included. If it is viewed from the point of view of the step-wise theory, it may be maintained that diagnosis has been early enough in a number of instances and treatment effective.

Survival curves could be expected to suggest the existence of step-wise spread in various clinical forms of cancer should such cancer types exist; but it would be necessary to exclude the possibility of "false positive" histological diagnosis to establish this point firmly. (See subsequent discussion.)

In the foregoing discussion of cancer a definition has been tacitly assumed—namely, that cancer is a neoplasm with power of metastasis. In this view certain lesions are misnomers—namely, basal-cell carcinomata. The definition mentioned refers simply to the behaviour of the tissue and is not a matter of morphology. In practice the histopathologist is confronted by morphological findings, and it is his business to read expected behaviour into these findings. While, no doubt, the cellular pathology of Virchow has been the means of establishing the theory of metastasis, one cannot deduce from the morphological findings by means of any known principles that a given primary lesion will metastasize. If it was possible to do this there would never be any doubt or divergence of opinion in a group of experienced pathologists when they were confronted by a tumour with which they were unfamiliar. The histological diagnosis of any primary lesion is always a matter of opinion. The correlation between morphology and the power of metastasis has to be established empirically, and there is constant need for checking pathological opinion against the actual behaviour of the disease processes. If the corrected survival curve continues to



decline until its cuts the base line, it is clear that histological "false positives" have not been included in the series, and that there can be little doubt about the explosive theory of spread of carcinoma. If, on the other hand, the corrected survival curve flattens, this could mean either that the step-wise theory holds and treatment has been sufficiently early, or alternatively, if the explosive theory is correct, that the histological diagnosis includes many "false positives", on the assumption that the diagnosis hangs on histology. This would be a clear challenge to the histopathologist to review his cases with a view

TABLE X.  
Carcinoma of the Cervix Uteri.

Period After Treatment. (Years.)	Royal Newcastle Hospital. Cumulative Man-Years per 100 Cases.	Hypothetical Cumulative Man-Years per 100 Cases.
1	81.5	67.5
2	139.5	115.0
3	184.0	152.5
4	219.0	185.0
5	247.5	213.5
6	272.1	240.5
7	293.5	264.5
8	312.5	286.5
9	330.0	306.5
10	346.5	325.5
11	362.5	342.5

to discerning morphological differences between true carcinoma and pseudo-carcinomatous lesions. There are historical examples of such a revision of opinion in which various distinct lesions have been differentiated from carcinoma—for example, sclerosing adenosis (Bloodgood,

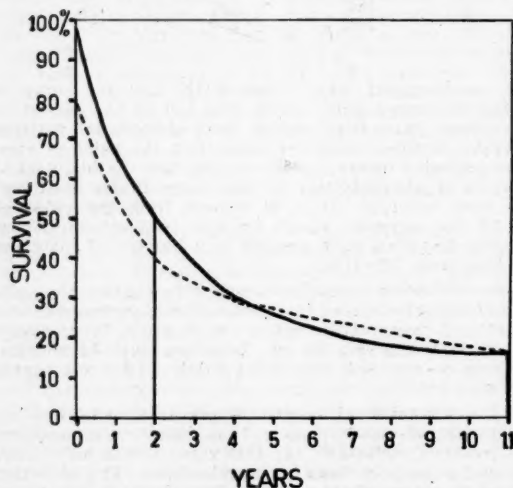


FIGURE VII.

Carcinoma of the cervix uteri: solid line, Royal Newcastle Hospital cases; interrupted line, hypothetical series.

1932), epidermidization of the endocervical glands (Stone, 1916) and also the recognition of *molluscum sebaceum* (MacCormac and Scarff, 1936). It is conceivable that a carcinomatous lesion may be morphologically indistinguishable from a non-metastasizing lesion; but on a behaviouristic definition the latter cannot be regarded as cancer. It is clear that the number of "false positives" has a considerable bearing on the five-year survival rate, and the question of the standard of diagnosis cannot be overlooked if several series are being compared relative to the effects of different treatment or earliness of treatment. It may prove very instructive to have survival curves accord-

ing to histopathologist rather than according to either mode of treatment or surgeon, as possibly the standard of diagnosis is the most important single factor in determining the shape of the survival curve or the apparent cure rate.

There is one further use of survival curves that remains to be mentioned. Whether treatment is undertaken to cure or to palliate, I hope it is true that one of the objects is the prolongation of life. Certain treatments carry a mortality rate which means that life is taken from some patients. A treatment cannot be regarded as at all effective unless the amount of life given to some people exceeds that taken from others. How may this be estimated? I suggest that the best unit for the purpose is the total man-years lived. This quantity is represented by the area under the survival curve which may be very conveniently used for such estimations. Let us take a fictitious example of carcinoma of the cervix and suppose an operative mortality rate of 20%. (Marcial-Kojas and Meigs, 1955, report an operative mortality rate of 25% among patients in Stages III and IV treated by radical operation.) The set of fictitious survival rates is shown in Table IX in comparison with the actual survival rates observed among treated patients at the Royal Newcastle Hospital, the tabulations for which are given in Table III. The survival rates given (relative) are much better than the Royal Newcastle Hospital survival rates. Which is the better result? Conversion of the relative survival rates to absolute survival rates puts an unfavourable complexion on the figures. Turning to Figure VII, one may see the two survival curves; it appears that there is not a great deal of difference between them. When the accumulated man-years are compared, it is seen that the fictitious curve never gains advantage over the other (see Table X). If a given form of treatment is applicable to a limited group of "suitable" or "well selected" cases, the survival curve of such a limited group is analogous to the cases of carcinoma of the cervix treated by radium and operation as shown in Figure V. To assess any scheme of management, it is necessary to include in the survival curve all cases derived from a given source of population, not just a restricted group submitted to a particular treatment. If the treatment is effective, the results of the whole group will be improved. It is certainly possible for a treated group to have an apparently improved survival rate because they are patients with an inherently more favourable outlook—not because of treatment.

#### Summary.

The pursuit of early diagnosis and radical treatment of cancer is based on the theory of step-wise spread of the disease. The results of treatment do not seem to accord with expectations based on this theory.

By the use of definite and easily ascertainable data, "corrected" survival curves can be constructed easily, and such curves, if continued to expiry, provide a certain means of recognizing cancers which exhibit the explosive manner of spread. It is suggested that many, if not all, cancers are characterized by this mode of spread.

There is an urgent need to construct these curves for the common clinical types of cancer, in order to determine whether the explosive spread occurs or not. Such information would be of fundamental importance to the project of "early cancer detection", and would bear directly upon the question of what constitutes rational treatment of cancer.

In the absence of genuine control curves—and there seems to be little possibility of obtaining them in the present-day set up—corrected survival curves continued to expiry provide fundamental information for examining the biological nature of cancers although treated by operation or irradiation.

Corrected survival curves also provide the histopathologist with a valuable check on his opinions regarding primary lesions. It may be more instructive to prepare curves according to histopathologist rather than according to mode of treatment, as the standard of diagnosis is possibly the most important single factor affecting the apparent results of treatment.

The area under the curve represents man-years lived, and this unit is probably the best for assessing relative merits of rival treatments, provided the comparison being made is valid.

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#### SOME CHILDBIRTH CUSTOMS AMONG THE NGALIA TRIBE: CENTRAL AUSTRALIA.

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OPPORTUNITIES seldom present themselves to the obstetrician of gaining a-priori knowledge of native childbirth methods amongst our own nomadic or semi-nomadic aborigines. In these isolated tribes childbirth is very much "black woman's business", and to date there are few records of any details. Among the Ngalia, into whose existence the white influences have recently penetrated, pregnancy care and childbirth procedures are still very confidential. The casual observer can easily detect late pregnancies, but the onset of labour and the place of confinement are kept secret until after the birth.

Recently, as a member of a scientific party from the University of Adelaide, I had the good fortune to be at Yuendumu Native Settlement when two native births occurred. Although I did not myself witness either of these, news of the births soon came to camp, and this made possible the collection of some details of the puerperium which are recorded in this paper.

#### Yuendumu.

The Yuendumu Native Settlement was established about ten years ago; it is an aboriginal reserve extending from about 170 miles north-west of Alice Springs westwards towards the Western Australian border, and covers an area of about 850 square miles. The Ngalia tribe, otherwise known as Wailbri, until recently fully nomadic, inhabits this area, and the majority collect around the settlement area, which consists of a few residences, a school, a hospital, a hall, workshops and stores *et cetera*. Approximately 400 Ngalia have made their camps within three or four miles of the perimeter of this settled area. Their camps, which are divided into groups or "suburbs", are separate, and it is apparently by agreement that the distribution is arranged. Occasionally, following disputes, there is movement from one "suburb" to another. The camp of each family group consists of little more than a windbreak, and in August it was open to the west, as the prevailing wind then was from the south-east.

Their habits of only a few years back have been modified by the wearing of clothing and by the regular distribution of food, which has relieved them of their main occupation of the past—that is, food gathering. There is a daily issue of a stew of high protein and fat content as well as a weekly issue of flour, sugar and tea, with extra rations for nursing mothers. Into this life the newborn plicaninnies arrive at a slowly decreasing rate *per annum*; 29 were born here or hereabouts in 1953, 26 in 1954, and 19 in 1955. Accurate records of births and deaths are available only since 1953. An account of life in this settlement has been described in some detail by Campbell and Barrett (1953).

#### Native Childbirth.

Native births occurring in either mission hospitals or town hospitals are often witnessed by white attendants, so that the squatting position for delivery and even the management of the third stage of labour are moderately well known. The more primitive aspects and details can be seen only in the native camps.

However, very few native births occur in established hospitals. The great majority are normal confinements which are conducted by the tribe's own midwives, the older women, in selected spots away from the general camp area. Occasionally it may happen that some difficulty will prompt a desire for help, and in these days this may lead to a call for an aerial ambulance in order to transfer the patient to a base hospital.

J. de Vidas himself observed normal and abnormal native childbirth in 1946 among the Aranda tribe and recorded some details of pregnancy and labour, particularly with regard to delivery of the baby and the placenta. This is

the fullest account of childbirth details found in a search of the Australian medical literature of the last twenty-five years. De Vidas pointed out that the natives' knowledge is limited to normal labour, and that there is a high maternal and foetal mortality rate in the abnormal. However, his article made only brief mention of the early newborn period. Cleland in 1953 made reference to some details of childbirth and after-care.

During the later stages of labour the prospective mother adopted the usual squatting position, and was supported by one midwife, who encouraged her, and as well as constantly rubbing warm ashes over the abdomen, applied force during uterine contractions. The baby was expelled from the vagina unaided onto the red earth and then placed near the fire with the umbilical cord still attached. The cord was then severed by being jabbed with a yam stick (Figure



FIGURE I.  
The chief midwife.

#### Recent Observations.

The main subjects of the present observations were P.N., one of the wives of D.D., and the newborn baby. D.D. had been banished from his camp at the onset of labour and moved away about 500 yards, where he established a



FIGURE II.  
Midwife holding yam-stick to show the blunted end.

temporary camp for himself. He had to be out of earshot and was not permitted to see his wife or the baby for about the first seven days.

I did not myself witness the birth, and the few birth details I mention were given to me by the head midwife (Figure I).



FIGURE III.  
The baby, showing the dried state of the umbilical cord fourteen hours after birth.

II), about 10 inches from the baby (Figure III). The exposed end was next dressed with mud made from the red earth. The placenta was delivered easily by foot pressure over the fundus of the uterus while the mother was still in the squatting position. This birth took place about midnight on Sunday, August 12, and I first saw the baby and the camp at 2 p.m. on Monday, August 13—that is, fourteen hours after birth.



FIGURE IV.  
General camp scene, showing P.N. with her newborn and the other camp occupants.

#### The Puerperium.

Some of the camp details can be seen in Figure IV. The newborn full-blood aboriginal is surprisingly pink, and it appears that the natives' concern prompts the rubbing of charcoal into the skin of the forehead and the abdomen to "make him proper blackfeller" (Figure V). The baby was not covered except with a rather heavy coating of dust and ashes (Figure VI), and was lying asleep quite close to the ashes of the smouldering fire, whilst the mother, covered only with a blanket, lay at ease on the ground, shading her eyes from the sun. The placenta had already been buried and burned, without rites, in the hole prepared for this purpose.



On Tuesday, August 14, at 2 p.m., when I paid my second visit, I found P.N. "fumigating" herself over a ditch from which smoke was rising through her thighs (Figure VII). This ditch was about three feet six inches long and 12 inches wide, and contained a smouldering fire, covered with ashes and dirt, and the mother was reclining in it, in the attitude shown. Lochia, like menstrual loss, is considerably less among natives than among white women;



FIGURE V.

The baby, showing charcoal rubbed into forehead and chest. Also note the cord "necklace".

just how much this "smoking" of the vulva influences the loss is uncertain. The fundus was about two fingers' breadth below the umbilicus when I was privileged enough to feel it at this stage. No evidence of lochia was seen even though a close watch was observed. This "fumigating" has in the past been the cause of some severe burns.

Not unexpectedly, early ambulation was practised within the small camp area. Breast feeding occurred from the earliest period, and the feeding times were dictated by



FIGURE VI.

The newborn baby, as first seen, lying on the earth and an old blanket, and covered with dust and ashes. Note light skin colour.

circumstances rather than routine. Subsequent information (October 24) revealed that this baby needed complementary feeding.

The baby had no particular place of its own in this crowded camp, except that it could often be found close to the fire or hidden under a blanket. It was equally well accepted, without fuss, by all the other occupants including the mongrel dogs.

#### The Cord Management.

After the initial treatment already mentioned, the cord was left uncovered and unattended. No doubt its early separation (Figure VIII) was due to warmth from the sun, ashes and earth, and from its constant exposure. The exact time of separation was not known, but it took place somewhere between thirty-six and fifty-two hours. There were no apparent cord complications.



FIGURE VII.

P.N., with scarf round head, reclining over the "fumigating ditch", whilst other camp activities continue.

After its separation it was covered with strands of human hair and then bound with a strip of red rag and made into a form of necklace for the baby (Figure V), which was to be kept, but not necessarily worn in the presence of whites, for some months. Those in contact with aborigines have often expressed surprise when told of this custom, and very few can recall seeing it; however, the midwife told me that the cord is nearly always kept. It is referred to by de Vidas and again by Basedow, whilst Spencer and Gillen refer to the significance of this custom among the Warramunga tribe. Spencer again makes



FIGURE VIII.

Photograph taken fifty-two hours after birth, showing cord separation.

reference to the navel string or *worlu* among the customs of the Kakadu and allied tribes. On one visit, after I had previously expressed interest in this piece of cord, I noticed its absence, and only after some searching was this token found under a blanket.

#### Subsequent Course.

Life was observed proceeding in this calm manner for a week, P.N. being cared for by the senior midwife, who

stayed with her. She prepared the meals and generally ran the camp. On the eighth day P.N. was up and about, and D.D. had been allowed to return. The baby was taken up to the sister in charge of the camp sick-bay for registration, admiration and the appropriate gifts which always accompany this occasion.

#### Acknowledgements.

My thanks are due to the director and officers of the Welfare Department, and to Sister Rhoda Hannah and Mr. and Mrs. Fleming for their valuable help throughout my stay at Yuendumu. I am most grateful to W. K. Nolan, clinical photographer of the Royal Adelaide Hospital, for the preparation of the photographs.

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## Reports of Cases.

### THROMBOSIS OF THE FETAL CORD.

By DAVID ZACHARIN,  
Melbourne.

SPONTANEOUS thrombosis of the foetal cord can be a complication of labour fraught with great danger to the unborn foetus, unless circumstances are such that the possibility is recognized and immediate measures are instituted to save the as yet unborn child, the available time being very short.

The condition appears to be one of great rarity. A search of world literature made in the library of the Victorian Branch of the British Medical Association and that of the Medical School, University of Melbourne, produced only two case reports from 1940 to 1956, both from the same authors in France in 1947. To the *Société d'obstétrique et de gynécologie de Nancy* on December 21, 1947, H. Vermelin, Zysek and P. Bertrand reported the following two cases.

The first was a case of spontaneous premature labour at eight months in a *primipara*, with a macerated foetus, considerable haemorrhage and a velamentous placental cord thrombosed three to four centimetres from the umbilicus with diffuse sanguineous infiltration of Wharton's jelly; the thrombosis of the entire umbilical vein extended intra-abdominally.

The second was that of a *primipara*, aged twenty-six years, with mitral insufficiency well compensated. Labour was of normal onset and progress. On complete dilatation, with artificial rupture of the membranes, an immediate escape of green coloured amniotic liquid was noted. By perineal forceps extraction an infant was delivered that rapidly cried. Thrombi were present in the lumen of cord vessels, and atheromatous lesions were seen.

#### Clinical Record.

The present case was that of a healthy *multipara*, aged forty years, with three healthy children aged respectively fourteen, twelve and eight years. These pregnancies had been "no bother", labour in the last two having lasted for about two hours.

In February, 1954, the patient had a ruptured ectopic pregnancy in the right Fallopian tube, and was treated at Alfred Hospital, Melbourne. In May, 1955, radioactive iodine treatment for thyroid hyperactivity was carried out at the Royal Melbourne Hospital.

No sign of thyroid enlargement or malfunction was to be found during the ante-natal period. She had an uneventful ante-natal period, but gained weight from 11 stone 10 pounds to 13 stone seven pounds during this time, owing to dietary indiscretions. Her calculated date of confinement was September 10, 1956, and she came into normal labour on the evening of September 17. The foetus was in the left occipito-anterior position, and the foetal heart sounds were well heard. The onset of labour was accompanied by the loss of some clear amniotic fluid.

Easy regular contractions followed for five and a half hours; then, at 12.10 a.m., when the head had partly descended, there was a sudden rush of a large quantity of heavily meconium-stained fluid. The highly experienced sister in charge, duly alarmed, was fortunately able to get help at once, and within seven minutes, with the low application of forceps, a very blue female baby was delivered; the baby immediately cried, and breathing continued normally. The birth weight was seven pounds. The foetal cord, for a distance of six centimetres from the umbilicus, was swollen, dark and thrombosed for no apparent reason. There was about one-eighth of an inch of normal cord tissue between the thrombus and the abdominal skin, which enabled a ligature to be placed at this point, flush with the skin. "Methergin", one millilitre, was administered intravenously to the mother; but after half an hour, when about one and a half pints of blood had been lost in spite of a contracting uterus, a very adherent placenta was manually removed.

On macroscopic examination, apart from meconium staining, the placenta was complete and normal in appearance. The cord was 58 centimetres in length and normal in appearance apart from the area of thrombus described. Regrettably, owing to some staff confusion, the placenta was destroyed during the night, and no microscopic examination could be made.

The convalescence of the mother and infant was uneventful. Penicillin was administered to the child for three days for fear of ascending cord infection.

#### Comment.

It may be a point of interest in the case that the fourteen-year-old daughter was sent to hospital with infective hepatitis when the mother was about five months pregnant. No other member of the family was affected.

There is no mention of this condition of the foetal cord in any of the text-books consulted.

#### Acknowledgements.

My thanks are due to Miss M. Booth, librarian to the Victorian Branch of the British Medical Association, and to the staff of the Central Medical Library, Medical School, University of Melbourne, for their search of the literature.

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### A CASE OF LEPROSY IN A WHITE MALE EUROPEAN.

By E. A. C. FARRAN, M.D., M.S.,  
Melbourne.

Mr. H. was born in India in 1914, his father being in the Indian Army. He left India in 1919 to be educated, and on his return to that country was employed by the

English Civil Service in the Madras area. He finally left India in 1948, and after a short visit to England came to reside in Australia in 1950. He is a married man with two children at school, and has a clerical occupation.

The rash (Figure I) appeared in September, 1954, when he had been in Australia four years, and he came for treatment three months later. He had a condition

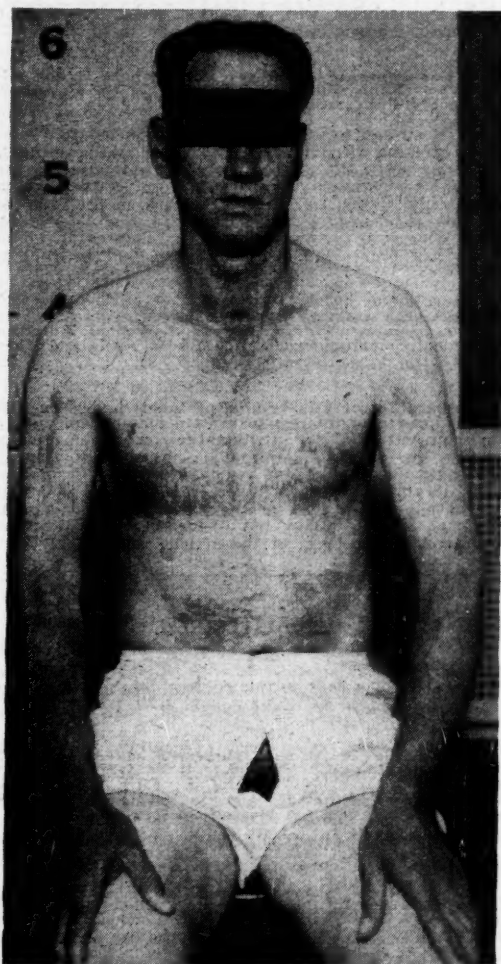


FIGURE I.

resembling a contact dermatitis, and when treated with zinc and starch paste the rash appeared to subside. He returned in April, 1955, when he had a further rash which (Figures II and III) much resembled ringworm. A Whitfield ointment was prescribed, and the active manifestations of the lesion seemed to subside.

Some nodules persisted, so that on May 19, 1955, he was referred to a skin specialist, who, seeing the nodules, thought the condition was one of *mycosis fungoides*, and suggested that a biopsy should be taken. This was done from a nodule on his wrist (without gloves), and at the same time a Wassermann test was performed. The specimen was sent to Dr. A. V. Jackson, of the Alfred Hospital, Melbourne, whose previous experience enabled him to stain this specimen to show the germs in the tissue and make a firm diagnosis of leprosy.

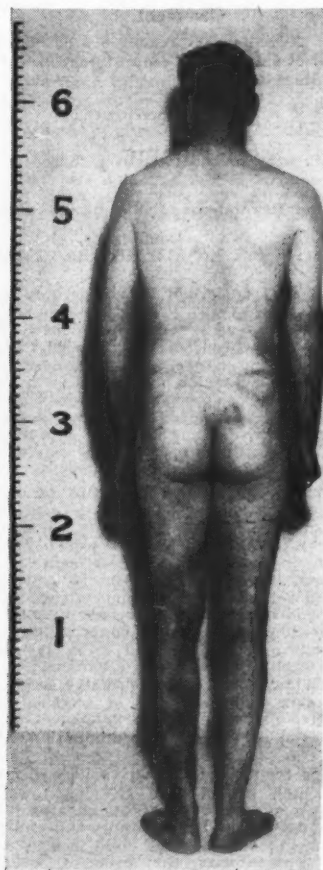


FIGURE II.

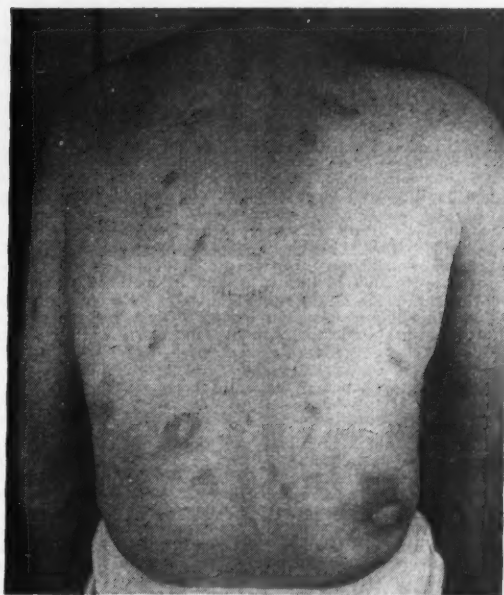


FIGURE III.



## Comment.

This case is recorded to present a rare disease in this country and to illustrate the importance of the biopsy in arriving at a diagnosis.

## Reviews.

**Child Health and Development.** By various authors, edited by Richard W. B. Ellis, O.B.E., M.A., M.D., F.R.C.P.; Second Edition; 1956. London: J. and A. Churchill, Limited. 8½" x 5½", pp. 535, with illustrations. Price: £2 2s.

THIS is a splendid book and a considerable improvement upon the rather disappointing original which appeared in 1947. Of the 23 chapters 12 are entirely new, and most of the others have been revised or expanded. The book is enlarged by about 160 pages and 32 figures, and is well printed on good paper which does justice to the excellent illustrations. Appendices on normal biological values and on social legislation have replaced those on blood groups and on voluntary organizations. Originally Professor Ellis had the assistance of 12 contributors, but for this edition he has 16, ten of whom have replaced six of those in the first team.

To avoid overloading the student's curriculum it is essential to select with the utmost care the material to which the attention of students is specifically directed. In this book Professor Ellis appears to have selected the pediatric material which is indispensable as a complement in the integrated presentation of the subject of general medicine. This is no mean achievement, for such a text-book has long been sought. Indispensable to a study of child life in the medical curriculum are: facts concerning normal and abnormal growth and development from the earliest prenatal stage through childhood and adolescence to maturity; the intellectual, emotional and instinctive development, not restricted to mere considerations of physical growth; an active preventive policy. These facets of medicine are adequately covered in the eleven contributions in Part I of the volume.

In Part II are twelve articles on various social aspects of child health which provide the steering towards positive health and optimal efficiency of the natural increase of a well-organized society. Information appertaining to the United Kingdom is supplied on child health services, the school health programme, the care of under-privileged children, child guidance, vocational guidance, educational aims and problems, health education, juvenile courts and the principles of punishment. Supplementary chapters contain brief discussions on child life in the tropics and on the subject of milk production and processing.

The legislative provisions and services in the English scene would require local variants in the medical school programmes in Australia. With that modification, the contents of this book could with many advantages be used as required reading for our students. Part II with local modifications is also informative for the ancillary medical services concerned with the care and upbringing of children. It is of great importance that the medical profession should be instructed in such a manner as to qualify its members to play the leading role through breadth and depth of knowledge of the subject. General practitioners of medicine penetrate to the units of society—the families in the home environment. Child health and development should hold pride of place in their ministrations to the people whom they serve. No one is likely to find himself in agreement with everything he reads in this masterpiece of Professor Ellis and his collaborators, but each will find that his critical faculty is stimulated to pinpoint his own opinions and attitudes on the controversial matters.

**Strabismus: Diagnosis and Treatment.** By Beulah Cushman, M.S., M.D.; 1956. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson. 9½" x 6", pp. 208, with illustrations. Price: 66s.

BEULAH CUSHMAN has produced a practical and useful book on strabismus, and as the author of the foreword states, it merits a successful career. This book does not pretend to be a treatise, but is rather a handbook, which will prove invaluable for the student preparing for his diploma and also for the practising ophthalmologist, particularly the ophthalmologist whose experience in the treatment of strabismus is still somewhat limited.

Because of the author's complete acceptance of the views and theories of Duane and White, the book has a type of

dogmatism which in many ways is useful to someone seeking a direct answer to a particular problem. For practising ophthalmologist and student this is ideal. However, as a result of the author's acceptance of the work of Duane and White as "gospel", the bibliographies at the end of each chapter are of necessity limited.

The chapter on operative techniques is lucid and correct, although not all Australian ophthalmic surgeons will agree with the criticism of myectomy of the inferior oblique at the orbital margin.

The book concludes with a section which describes 62 case histories, many of which are referred to in the text.

**The New Commonsense About Sex.** By Leonora Eyles; 1956. London: Victor Gollancz, Limited. 7½" x 5", pp. 96. Price: 10s.

THIS is a straightforward little book intended for young people. It explains without any fuss what should be generally known about sex in adolescent and young adult years, with helpful advice for the days of courting and early marriage. The popularity of this book will be seen from the fact that it was first published in November, 1933, and by October, 1952, had gone into 24 impressions. In the present volume the book has been completely rewritten and brought up to date.

**Tables of Amino Acids in Foods and Feedingstuffs.** By D. Harvey; Commonwealth Bureau of Animal Nutrition, Technical Communication No. 19; 1956. England: Commonwealth Agricultural Bureaux. 9½" x 7½", pp. 58. Price: 15s.

THE preparation of this volume of tables has risen from the recent growth of interest in protein metabolism and the greater appreciation of the nutritional importance of proteins. The tables are in two main groups relating to foods of animal origin and to foods of vegetable origin. Throughout the book 18 amino acids are taken into account, the tables listing the content of each in the various foods. A bibliography runs to 182 articles, but its usefulness is decreased by the fact that the titles of the articles are not given.

## Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"The Essentials of Modern Surgery", edited by R. M. Handfield-Jones, M.C., M.S., F.R.C.S., and Sir Arthur E. Forriett, K.C.M.G., C.B.E., M.A., M.Ch., F.R.C.S.; Fifth Edition, 1957. Edinburgh and London: E. and S. Livingstone, Limited. 9½" x 6½", pp. 1282, with 649 illustrations. Price: 75s.

Completely revised and partly rewritten with the addition of much new material.

"Cytology Technics: For Office and Clinic", by H. E. Nieburgs, M.D.; 1956. New York and London: Grune and Stratton. 9" x 6", pp. 243, with 171 illustrations. Price: \$7.75.

This book is primarily concerned with techniques for the collection of cellular material, but brief mention is also made of the cytodagnostic aspects.

"Modern Treatment Yearbook 1957: A Yearbook of Diagnosis and Treatment for the General Practitioner", edited by Sir Cecil Wakeley, Bt., K.B.E., C.B., LL.D., M.Ch., D.Sc., F.R.C.S., F.R.S.E., F.R.S.A., F.A.C.S., F.R.A.C.S.; 1957. London: Published for the Medical Press by Baillière, Tindall and Cox, Limited. 8½" x 5½", pp. 320, with 24 plates and 23 figures. Price: 25s.

Contains 32 articles on a wide variety of subjects by authoritative authors.

"Discussions on Child Development: A Consideration of the Biological, Psychological and Cultural Approaches to the Understanding of Human Development and Behaviour", edited by J. M. Tanner, M.D., Ph.D., D.P.M., and Bärbel Inhelder; Volume II, The Proceedings of the Second Meeting of the World Health Organization Study Group on the Psychobiological Development of the Child, London, 1954; 1956. London: Tavistock Publications, Limited. 8½" x 5½", pp. 272, with 23 illustrations. Price: 28s.

The title is self-explanatory.

## The Medical Journal of Australia

SATURDAY, APRIL 20, 1957.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

### ACADEMIC FREEDOM AND ACADEMIC STANDARDS.

ACADEMIC FREEDOM is a major issue of our time. Why this should be so cannot be stated simply; the form of the issue and its origins differ from country to country. Heresy hunts in the name of security have greatly disturbed contemporary academic life in the United States. Obedience to the State and its official doctrines is made almost ludicrously in some academic writings coming from behind the Iron Curtain. Financial support makes the British universities closely dependent on the State; but, thanks partly at least to the efficient buffer action of the University Grants Committee, there has so far been no intrusion by the State on academic preserves. Problems arising from the Government's *apartheid* policy are just now coming to a head in the universities of South Africa. Australian universities have had to meet a number of challenges to their liberty, the latest being the system of appeal against university appointments now being foisted on the University of Queensland by the Queensland State Government; and the main point of conflict in relation to current legislation in New South Wales on medical registration hinges on academic standards and how they are to be determined.

In a leading article on the general situation in South Africa *The Times*<sup>1</sup> has expressed a strong view:

Academic freedom is the very keystone of the arch of liberty. If a university is not free to dispense learning to whom it will, and to draw upon every human source to enrich its store of knowledge, then liberty of thought is denied in its innermost sanctuary and there is no ultimate protection against complete tyranny over the mind.

<sup>1</sup> *The Times*, January 23, 1957.

This statement does not, of course, define the scope of academic freedom or the details of its application. It stresses the fact that its basis is liberty of the mind, and may with advantage be supplemented by a thought drawn by a reviewer, R. Brightman,<sup>2</sup> from a recent book on academic freedom by Professor R. M. MacIver:

... in standing for academic freedom, the members of a university are doing no more than assert the essential condition under which the university is able to make its great contribution to the moral quality of society and to its spiritual as well as to its material advancement. Society as well as the university suffers if procedures are instituted which seriously affect the integrity of institutions of learning, the intellectual independence of the faculty, or the professional status of their administrators.

The comment made by *The Times* was provoked by an announcement in the Speech from the Throne<sup>3</sup> at the opening of the South African Parliament on January 18, 1957. This was to the effect that the Government intended at the present session to introduce legislation "to provide university training for non-Europeans", the corollary of which would be the banning of non-European students at the "open" universities of Cape Town and the Witwatersrand. Subsequently the South African Government has announced<sup>4</sup> its intention of removing the non-European Medical School from the control of the University of Natal, of which it has been a part since its establishment in 1951. Who or what is to be the controlling authority has not been made clear, but the University of South Africa, a body which caters for external students only, has been designated as the future examining body for the Medical School. This action has brought vigorous protests<sup>5</sup> from the academic staff of the Medical School (who have been supported by the Dean and ten professors from the Faculty of Medicine at the University of Cape Town), from the Council of the University of Natal and from the Natal Coastal Branch of the South African Medical Association. It is, of course, like the action in the "open" universities, only a corollary of the deplorable government policy of racial segregation, but it constitutes a serious interference with the academic freedom of the universities, and will almost inevitably lead to a deterioration in academic standards.

Coming nearer home, we find other disturbing happenings. In Queensland the University Acts Amendment Bill, which had in the first week in April passed through all stages and required only the Royal Assent, threatens to make serious inroads on one of the most cherished liberties of any university—the appointment and control of its academic staff. It is stated<sup>6</sup> that the bill provides for a three-man appeal board presided over by a government appointed chairman, the other two members representing the Senate and the applicant (and, therefore, in practice, cancelling each other out). Its decisions will be final in all appeals against appointments, promotions and punishments. The effect of this, as *The Sydney Morning Herald* states, will undoubtedly be to narrow the field of applicants for academic posts and thus, sooner or later, to lower academic standards. This is surely a unique type of fetter that the University of Queensland is in danger of

<sup>2</sup> *Nature*, June 30, 1956.

<sup>3</sup> *The Times*, January 19, 1957.

<sup>4</sup> *The Times*, February 15, 1957.

<sup>5</sup> *South African M. J.*, February 23, 1957.

<sup>6</sup> *The Sydney Morning Herald*, April 4, 1957.

having thrust upon it. Most of the members of the Staff Association of the University of Queensland are understood to be opposed to it, and their opposition has been supported publicly by the President and Vice-President of the Sydney Association of University Teachers. It is to be hoped that the volume of protests will grow and that the Queensland Government will drop this unhappy measure.

The burning question in New South Wales at the moment is the Medical Practitioners (Amendment) Bill now under consideration. While the bill has a number of undesirable features, the crucial objection is to Clause 8 (a), which gives the Minister for Health power to register a foreign doctor to practise in a regional area even if the Medical Board of New South Wales decides that none of the applicants for the post in the area is suitable. The essential issues involved are not so much those of administrative needs or of sectional interests, but those of public safety and academic standards. The Medical Board is a statutory body set up to administer appropriate State legislation, and it has had certain discretion in the registration of foreign doctors, the exercise of which has called for assessment of academic standing. Fairly recent legislation has allowed those desiring registration to undergo an examination at the hands of highly competent members of the Faculty of Medicine in the University of Sydney. This has eased the way for those who are soundly qualified medically and who would find it an intolerable hardship to spend some years as full-time students; and at the same time it allows for the preservation of academic and practical standards. However, the Minister for Health is not satisfied to accept the verdict of experienced university teachers or the jurisdiction of the medical men of high professional standing who constitute the Medical Board; lacking any academic knowledge of medicine, he arrogates to himself in certain circumstances the right to decide finally on the fitness or otherwise of a candidate to practise medicine. The factor of public safety involved surely needs no elaboration; it is the immediate practical danger. The more subtle, and perhaps in the long run the greater, danger is the thrusting aside of the judgements of those academically qualified to give them. This raises the whole question of the standards required by Australian universities (for this is a live issue in other States as well as in New South Wales) of those who are to graduate in medicine. Existing legislation recognizes these standards as the basis of registration to practise medicine. The amending legislation introduces a completely new principle, with far-reaching possibilities, and implications which go beyond the medical faculties. It threatens the very basis of academic standards and authority.

These local issues have been deliberately introduced here in a broader context. They are of great importance to those on the spot and call for immediate and vigorous opposition. However, even if the objectionable legislation on the local issues comes into force, as seems likely, the wider issues remain. The maintenance of academic freedom and worthy academic standards is a main pillar of Western civilization at its best. Remote as the academic world may seem to the man in the street, academic freedom is still vital to the highest interests of society and, as *The Times* has said, is the very keystone of the arch of liberty.

## Current Comment.

### SINGING AND THE HUMAN VOICE.

ON several occasions in recent years we have referred to the human voice, to the manner of its production and to the ways in which it is used during singing. One aspect, always of interest, is the matter of determining the category to which the voice belongs. In the issue of this journal of October 23, 1954, we referred to some observations made by Edouard Garde. Briefly, these may be summarized as follows. Garde holds that it is possible to determine the range of a voice by measuring the chronaxie of the sterno-cleido-mastoid muscle, which is said to have the same chronaxie as the recurrent laryngeal nerve. By this means may be found the note of the highest frequency which the subject can sing after the voice has attained its maximum development. Garde was dealing primarily with the care of children's voices in class singing. In a paper on male and female voices, William A. C. Zeffri<sup>1</sup> discusses the way in which the category of a voice may be determined, and states that this can be done exactly by laryngoscopic examination to find the length of the vocal cords. His paper is interesting, in that he discusses the differences between the male and female voice, the main ones of which are the size of the larynx and the length of the vocal cords. He has much to say about the evils of wrong production, which in his opinion affect men much more than women, and he deplores the lack of knowledge of the construction and mechanism of the vocal organ on the part of teachers of singing. Actually, most properly qualified teachers are by no means ignorant of these matters. Zeffri's paper is well worth reading, but in this place it is impossible to go into it in great detail. It appears that he must have been singularly unfortunate in the opera singers he has heard, as may be gathered from the following rhetorical question: "Who has not witnessed the spectacle of a tenor with reddened neck and contorted face blasting forth a high C and being rewarded with a salvo of bravos?" Surely the type of tenor whom he describes must be the exception rather than the rule in these days. No competent teacher of singing would countenance such a performance, in which the high notes are attained only by the use of force. Indeed, it is almost axiomatic that if a singer cannot attain a certain note softly and easily, then he or she should not be singing that note at all. This, of course, is not to say that the range cannot be extended by training and practice, but they must be of the right kind. In proper voice production the accent is on ease and flexibility, never on force or strain. With regard to determining the category of the voice—whether soprano or contralto, or bass, baritone or tenor—V. E. Negus<sup>2</sup> (whom Zeffri quotes in another context) has this to say in his well-known textbook:

It is not always possible to distinguish the type of voice by an examination of the larynx, according to most observers. Moure and Bouyer quote Morrell Mackenzie, Castex and Mandl as stating that the laryngoscope was useless in this respect, but they themselves say that low-range singers have a prominent Adam's apple with long, large and thick cords, especially in the case of basses; incidentally, they mention that these singers have big chests and therefore powerful voices.

The same authors describe the larynx of sopranos and light tenors as being smaller, with thin, small cords, and less well-developed chests. "We are, therefore, able to appreciate the vocal powers of a singer, but within limits which allow of being demarcated. . . . We cannot, evidently, from our examination, state precisely the graduations of the range of voice and diagnose at sight a deep baritone from a high one. . . ."

Lennox Browne and Behnke think the size of the cords accounts for the difference of voice as between sopranos and basses, but consider the variations as too minute as between sopranos and contraltos. They say

<sup>1</sup> Arch. Otolaryngol., January, 1957.

<sup>2</sup> Negus, V. E. (1929), "The Mechanism of the Larynx", 431.



that in sopranos and tenors the cords are usually shorter, but not always, and usually thinner. They also mention that in contraltos and basses the thyroarytenoid muscles are bulky and allow the cords to yield less to the stretching of the crico-thyroids.

In general, Zerffi's remarks about the bodily build of singers are in agreement with those of Negus—that is to say, short people are likely to have higher voices than tall people; but this is by no means infallible. The voice is affected by many factors, physiological and pathological. Zerffi holds that the category of a voice can be determined accurately if a laryngoscopic examination is carried out while the subject is attempting to sing. This sounds a very Spartan procedure; and it is noteworthy that Negus, who made a number of such observations on trained people, pays a tribute to their fortitude during the investigation. One can hardly imagine the young beginner accepting without protest such a prelude to training in singing, which of all things must be enjoyed to be done well. Indeed, the most likely result of insistence on the examination would be a considerable reduction in the number of singing students; some people, of course, might think this highly desirable. There seems to be a parallel here between the intelligent and experienced teacher of singing and the good family doctor. The former, with an adequate knowledge of all the factors involved in the production and training of a voice, will in general encourage the voice to develop within its own comfortable range, which will expand gradually and without strain. The good family doctor, with a high degree of clinical acumen, will be able to care adequately for the roast and boil conditions met with in his practice. Both will know when ancillary aids are necessary.

#### OBESITY.

OBESITY is a well-worn theme for medical discussion, and a suitable title would be the epigrammatic: "Obesity follows gluttony." This seems at a first glance to be an obvious statement, but in fact a great deal has been left unsaid. There is little dispute about the truth of the epigram in so far as a gain in weight results from the ingestion of food in excess of bodily requirements; but there is considerable dispute about the ways in which the situation should be handled. It would be interesting to know the distribution of obesity throughout the animal world, both present and past; but information, although by no means lacking, is scanty. We usually think of obesity in terms of well-organized multicellular creatures, and in particular humans. If, in analysing the problem, we use the biological method of dissection in both a material and a metaphysical way, we may consider a single cell. To many people it is, no doubt, an appealing phenomenon that a unicellular organism may become obese. Life in cellular terms consists of the metabolism and exchanges of protoplasm; at least, as far as we know. For continuous existence a source of energy and a source of nitrogen are needed; and in particular needed at the stage, which all living cells at some time have, of increasing protoplasmic mass. This constitutes growth, and for this phenomenon the synthesis or ingestion of all protoplasmic constituents is required. If unicellular organisms, for instance, algae, are placed in distilled water under the influence of light, then photosynthesis may proceed, but nitrogen is not available. Under these conditions the organisms become obese. This phenomenon has been shown many times and commented upon by R. A. McCance.<sup>1</sup> A rather more complex organism, the hydra, will refuse food when it is satisfied (R. Buchsbaum).<sup>2</sup>

Higher animals vary in their ability to control food intake. Rats and mice can regulate their food intake to a nicety, even when traps are laid for them by mixing inert material with their food. During lactation food intake will be increased, only to drop again when lactation ceases;

yet the animals maintain an almost constant weight. Adult rats, however, if confined to narrow cages, will become obese; the mechanism of this phenomenon is not clear. It has been said, although the matter is in dispute, that another animal—the young child—will take the correct amount of food, given free choice: certainly many young children will stop feeding quite abruptly, and refuse further food. Some animals wax and wane in fat. The Atlantic seal is fat in the first few weeks of its life while suckling; but it is then left by its mother in its littoral environment until it is able to enter the water, swim and hunt. This is a process to be accomplished of its own volition, and there is a period of waiting, which may last a few weeks, during which the infant seal lives on its fat. Many animals hibernate on fat, and in doing so lose up to 40% of their weight. In this connexion seals show a seasonal variation of fat content. The higher animals so far mentioned appear to have a finely controlled mechanism, and obesity in them would seem difficult to produce. On the other hand, some of the hunters and scavengers, who very often have little enough food, will overeat and become obese given the chance—for example, dogs and wolves. The domestic hazard of corpulence is not unknown to the more fawning canine personality.

It is difficult to know how closely man fits into any of these groups, but it seems most acceptable to regard him as a hunter. Perhaps our true state of both existence and physical well-being is that of a South African bushman. There is no doubt that our habits have changed greatly. With the advent of settled existence and mechanization we have become much more lethargic, and have developed not so much a food cult as a feeding cult. The words epicurean and hedonistic therefore come to have a poignant etymology. The Tupi Indians, a fast-vanishing race of Central America, and in particular of the Matto Grosso, are peculiar people in that the members of the same tribe may at one time be celibate and fierce hunters, and at others sedentary and amorous. Another concomitant difference is that the hunter is slim and the amant corpulent.

The inference from these observations is perhaps that we should not be obese. We do know that obese human beings have no practical glandular reason for being fat, and that both fat and thin people absorb about 87% of ingested Calories and utilize them in the same manner. What we know least about is how and why our appetites lead us into corpulence. W. H. Sheldon<sup>3</sup> has commented upon obesity and pregnancy and noticed how a woman may lose all control of food intake during pregnancy and after delivery. She may eat ravenously and become immensely fat in a short time. The appetite then levels off, and the body weight is maintained at a much greater figure. This state is usually complicated by the woman's eating two meals in the evening. Rats which have had the medial portion of the hypothalamus destroyed develop a similar voracious appetite; but after a period of weight gain, they become choosy about food, eat less, and maintain a new, greater body weight. This hypothalamic behaviour led to the conception of an appetite-regulating mechanism, an appetat, in the hypothalamus.

Many human beings find solace in eating and obtain mental rest by so doing. The habit may well be analogous to alcoholism, and the high relapse rate amongst dieting obese patients is perhaps only to be expected in face of continued and essential contact with food. Leucotomized people often become fat, as do some people who buy a car or give up smoking.

McCance believes that there are many factors concerned with regulating food intake including: (i) a humoral mechanism depending upon the blood content of sugar, and possibly other metabolites, which supply nerve cells with materials in order that the latter may produce widespread changes in activity and behaviour; (ii) a fully coordinated nervous centre or centres in the hypothalamus or below it; these centres are normally set by humoral or nervous influences to produce uncontrollable hyperphagia and are probably the two lateral nuclei of the hypothalamus; (iii)

<sup>1</sup> *Lancet*, October 3, 1953.

<sup>2</sup> "Animals Without Backbones", Volume I, p. 96, Pelican Books, London.

<sup>3</sup> *Lancet*, November 12, 1949.

two medial foci in the hypothalamus which restrain the activity of the centres lateral to them or below them; (iv) the cortex. The hypothalamic foci in man are presumably closely connected with the cortex and other centres; and although they are essential for the physiological control of Calorie equilibrium, it seems from animal experiment that control may be established after focal destruction, admittedly at a pathological level. From the practical point of view, in man cortical control is probably mainly conscious.

When all is said and done, how important is the treatment of obesity? Life insurance companies say that a man 25 pounds overweight at the age of forty-five years has a life expectancy which is 25% less than that of a man of normal weight. Certainly fat is a mechanical disadvantage and tends to make all illness worse, and may preclude an operation. Few people doubt that obesity should be treated. P. M. F. Bishop<sup>1</sup> believes that the real problem is that every fat person would like to lose weight without having to go on a diet. Of the five possible approaches to the treatment of obesity—changing a patient's attitude to eating; using drugs to curb appetite; improving the mobilization of fat; damaging fat cells so that they store less fat; diminishing Calorie consumption—only the first is practicable and useful, whilst the second is sometimes practicable. The uncomfortable truth for the public remains that if fat people wish to slim they must eat less, and continue to do so for a long time. Many will relapse, because the strain is too great. The uncomfortable truth for the doctor is that he knows too little about man and really precious little about why he sometimes eats too much.

#### THE ADOLESCENCE OF NUTRITION.

L. EMMETT HOLT,<sup>2</sup> who has done much over many years in laying the foundations for a thorough knowledge of the nutrition of children, attempts to develop a thesis that nutrition is only nearing the end of the first phase of its development, its infancy and childhood, and is now passing into adolescence. He has reviewed briefly the advances in knowledge from about the time of the first World War to the present, particularly in relation to the feeding of infants and children. Specifically he deals with the relation between food and digestive disorders. Once we used to attribute digestive disorders to food, but today, with rare exceptions, we no longer do so and believe instead that infections, enteric and parenteral, are the causes.

Ten years ago, Holt, with a group of collaborators, sought to obtain information which would answer two fundamental questions: (i) Is food absorption benefited by feeding a poorly tolerated foodstuff? (ii) Is recovery delayed by such feeding? Balance data on nitrogen, fat and several minerals were obtained from an infant with diarrhoea studied at three different levels of food intake—semi-starvation, full intake and intermediate intake. The net absorption of each foodstuff was increased by increasing the intake. Two groups of children with diarrhoea were studied, one being treated with initial therapeutic starvation, the other with full feeding from the start. Initial starvation failed to accelerate recovery. In cases of steatorrhea, it was found consistently that increases in fat intake were accompanied by large increases in absorption. The same was found in cases of coeliac disease and cystic fibrosis of the pancreas, congenital biliary atresia and kwashiorkor. Other investigators have had similar experiences. René Dubos<sup>3</sup> gave the final blow to the doctrine of therapeutic starvation when he demonstrated a marked lowering of resistance to three types of bacterial infection which he studied—namely, tuberculosis, staphylococcal infections and Friedländer bacillus infections.

Extensive work was done by Holt's group on the requirements of vitamins and also of essential amino acids in children. A minimum was determined for each, mostly by noting the intake at which the particular nutrient failed to appear in the urine. From these figures could be determined what extra was necessary under certain conditions. This is remarkably different from the commonly held view that several times the minimum should be given to allow for extra demands.

Amino acid deficiencies are assuming considerable importance in measures to control protein deficiencies in so-called under-developed countries. Commercial exploitation of essential amino acids as food supplements promises to rival the exploitation of vitamins. Apart from the financial waste, for amino acids are expensive, there is danger in consuming excess of certain amino acids because of the upsetting of amino-acid balance. Thus when lysine is given in excess, important losses of cystine, arginine and ornithine occur in the urine. The type of experimentation which has been mentioned is rapidly giving the quantitative data for all the essential nutrients. Qualitatively we probably know all the nutrients required in health, but this is not necessarily so in diseased or abnormal conditions. Where do we go from here? Cells die because of abnormal requirements of one or more of the nutrients. They may also die for lack of a conditional nutrient, a nutrient needed only in a particular pathological state. They may also die if, genetically, they are abnormal and cannot handle normal nutrients. This is well seen in the reaction of many people to galactose. That there are increased caloric demands in fever is well known, and there is believed also to be an increased demand for nitrogen. A very great deal is written now about mineral requirements in pathological conditions. Conditions are known in which excess of one or more of the vitamins is necessary. Recently there has been much discussion on the requirements for essential fatty acids, not only in the healthy but also in those suffering from various diseases. Degenerative diseases and anomalies of metabolism are hopeful fields for the discovery of missing nutrients. With increased knowledge of cell metabolism, substances which we do not at present regard as nutrients will be found which may be needed in the diet when cell metabolism becomes abnormal from the effect of some agency such as a toxin, or is abnormal because of genetic deficiencies. The studies in nutrition in the future are going to depend much more on cellular reactions than on rat growth and the external appearance of a rat's tail.

#### RELIGIOUS FACTORS IN MENTAL ILLNESS.

THE increasing complexity of medicine, practised against the background of an increasingly complex society, makes it important to look widely if the problems of the individual are to be rightly assessed and met. Many will therefore turn with interest to a recent book by Wane E. Oates<sup>1</sup> on "Religious Factors in Mental Illness". It must have been a difficult task to write a sane and well-balanced book on this subject. One can only say that the author has succeeded admirably. This is an important pioneer work in a field still largely unexplored. The author is Professor of Psychology of Religion and Pastoral Care at Southern Baptist Theological Seminary, United States of America. He was formerly chaplain of Kentucky State Hospital, where he did original research into the religious experiences of psychotics. He has carried out research projects at other psychiatric clinics, and is a member of the editorial advisory board of the American journal *Pastoral Psychology*. The book is based on clinical and pastoral experience rather than on academic and theological theories, though the latter are not ignored. Its aims, as stated in the preface, are:

(1) To interpret the religion of the mentally ill as nearly as is possible from the patient's point of view;

<sup>1</sup> "Religious Factors in Mental Illness", by Wane E. Oates; 1957. London: George Allen and Unwin, Limited. 8" x 5½", pp. 255. Price: 16s.

<sup>1</sup> J. Roy. Inst. Pub. Health and Hyg., December, 1956.

<sup>2</sup> Arch. Dis. Childhood, December, 1956.

<sup>3</sup> Bull. New York Acad. Med., January, 1955.



(2) to provide through such an interpretation another basis of communication between ministers, psychiatrists, and social workers in their work together in understanding and ministering to the mentally ill;

(3) to contribute to the psychological understanding of religion itself.

In his pastoral and research work Oates has had the cooperation of several American psychiatrists. Early in the book he makes the important point that the religious ideas of psychotics and neurotics should be taken seriously by the psychiatrist as well as by the minister, not only because such ideas are important to the patient, but also because their elucidation can contribute much to the understanding and treatment of the patient. Oates describes how certain types of religion can be damaging to mental health, and how some can act as defence mechanisms against deeper emotional problems. On the other hand, he tells of the prophylactic and therapeutic power of healthy religion as practised and preached by Christ and many of His followers down the ages. He sets forth the differences between healthy and unhealthy religion, and lists a number of distorted religious ideas widely held by the mentally ill, such as "the unpardonable sin" and "the end of the world". He relates symptoms to the cultural religious background, such as perfectionistic groups and leader-deification groups, and describes the religious aspects of interpersonal relationships—for example, dependent religious relatedness and the religion of hostility and withdrawal. Finally, he summarizes the various present-day approaches to religion in the treatment of the mentally ill by psychiatrists and ministers, and ways in which the two professions can cooperate. He shows a real awareness of the dangers and problems involved in such cooperation, and gives many helpful hints on how to solve them. He discusses with sympathetic understanding the personal problems of psychiatrists and ministers themselves, such as the emotional drainage involved in the work of counselling, and indicates how a living vital faith can help.

The book is not orientated towards the work of the general practitioner, who encounters most early cases of mental illness. This is a pity; nevertheless, the general practitioner will find much of interest in the book. Moreover, the religious experiences of neurotics are neglected in favour of those of psychotics, and it may be said that there are too many generalizations about "the religion of the mentally ill patient", and not enough attempts to distinguish between the religious experiences of the various diagnostic categories such as schizophrenia and manic-depressive psychosis. However, on the whole, the book deals wisely and tolerantly with most aspects of its subject, and should be read by all ministers, psychiatrists, psychologists and social workers. It is to be hoped that the work of Professor Oates will stimulate further thought and research in this important field.

#### FOUR "FAMILY DOCTOR" BOOKS.

Four smallish volumes, recently published by the British Medical Association, are the first of a "Family Doctor" series, the purpose of which is to tell patients about the malady from which they are suffering and so to help them, as each title implies, to live with it.<sup>1</sup> At the same time the books will enable sufferers to take a more intelligent interest in the treatment which their doctors are prescribing for them. As stated in the foreword of each book, much of the subject matter has appeared in a series of articles in the magazine *Family Doctor*; and at the request

of readers, these articles have been enlarged upon and incorporated into book form.

"How to Live with Your Duodenal Ulcer" gives a clear explanation of all aspects of the problem that ulcer sufferers have to face. It tells why and how ulcers develop and describes aggravating factors. The importance of early diagnosis is emphasized, and then the problems of treatment, whether medical or surgical, are assessed. In addition dietetic details are fully enumerated.

"How to Live with Your Blood Pressure" is mainly concerned, naturally, with hypertension, some five pages only being allotted to the less common entity hypotension. A series of drawings and diagrams illustrates the workings of heart and lungs, and the text explains these in a simple, clear manner. One feature of interest is the personality analysis, which shows how this can be a factor in uncovering the reason why some people have raised blood pressure. It is perhaps surprising to find more space given to the surgical treatment of the disease than is given to drug therapy.

"How to Live with Your Nerves" tackles this vexing problem very practically, and the text shows a nice balance of judgement in the matter of just how much detail to include. Topics dealt with include how to overcome being fearful of various real or imaginary happenings, how to groom your emotions, how to plan to live each day as normally as possible and the sex factor in normal living.

"How to Live with Your Rheumatism" covers all varieties of the "screws" from gout to slipped disks. It is a happily written volume that will help sufferers understand why their malady is going to be with them perhaps always and how they can best learn to put up with the adjustments that restricted activities may force upon them.

These four volumes should prove very popular with patients, and doctors can recommend them with the knowledge that they will play a most useful part in the overall treatment of the various diseases described. It is to be hoped that the series will be enlarged to include such topics as diabetes, tuberculosis and asthma. *Family Doctor* is to be congratulated on this further contribution to the difficult job of bringing constructive medical knowledge to the lay public—the purpose for which it was brought into being by the Parent Body of the British Medical Association.

#### INFLUENZA.

By a system of reporting which amounts to a world-wide medical intelligence system, the World Health Organization keeps a good eye on the trends of influenza, which remains one of the potentially most serious epidemic diseases. The most recent news is reassuring. According to reports received so far by the World Health Organization, there is no evidence that any important epidemic of influenza has occurred this winter in the Northern Hemisphere. The only exception is in Japan, where a widespread epidemic of mild type without fatal cases has been present since the beginning of December. The disease affected mainly school children. Influenza viruses of both types A and B have been isolated. In Western Europe and North America there have been localized outbreaks of influenza in a number of places, among them Belgium (Western Flanders), Austria (Styria), Poland, England and the United States of America. In Poland, since the first days of March, epidemics of mild course have occurred in the western part of the country. The virus is not yet identified. In England there have been very few clinical reports of influenza among members of the civilian population. Deaths from influenza and pneumonia have been unusually low for the season, and no excess of claims for sickness benefits have been reported. In England, A, B and C types of viruses have been detected by serological tests, and there has been no evidence of any widespread prevalence of any one infection. Type A virus strains have been isolated in the armed forces outbreaks. In the United States also, only localized epidemics of influenza confirmed by tests have been reported. All the outbreaks have been identified as type A virus infections.

<sup>1</sup>"How to Live with Your Nerves and Like It", a Family Doctor Book by Henry Harris, M.D., D.P.M.; 1956. London: The British Medical Association. 7½" x 5", pp. 144. Price: 8s. 6d. "How to Live with Your Duodenal Ulcer", a Family Doctor Book by Robert Kemp, M.D., M.R.C.P.; 1956. London: The British Medical Association. 7½" x 5", pp. 111, with illustrations. Price: 8s. 6d. "How to Live with Your Rheumatism", a Family Doctor Book by Oswald Savage, O.B.E., M.R.C.P.; 1956. London: The British Medical Association. 7½" x 5", pp. 142, with illustrations. Price: 8s. 6d. "How to Live with Your Blood Pressure", a Family Doctor Book by Baden Beatty, M.B., D.P.M.; 1956. London: The British Medical Association. 7½" x 5", pp. 142, with illustrations. Price: 8s. 6d.



## Abstracts from Medical Literature.

### DERMATOLOGY.

#### Selenium Sulphide in Treatment of Pityriasis Versicolor.

H. M. ROBINSON AND S. N. YAFFE (*J.A.M.A.*, September 8, 1956) state that *pityriasis versicolor* is a benign, non-contagious, superficial fungous infection of the skin caused by *Melassezia furfur*. It usually occurs on the upper part of the trunk and shoulders. The colour may be pink, fawn-coloured, light brown or whitish. Examination of scrapings of skin mounted with wet potassium hydroxide reveals filaments and spores of *Melassezia furfur*. The authors treated 32 patients suffering from *pityriasis versicolor* with a 1% solution of selenium sulphide in a water-miscible ointment base. Involution of lesions occurred in 28 patients, and no recurrence of the eruption was noted after a year. All patients had a shower, rinsing thoroughly to remove soap, and patted their skin dry with a towel. All clothing worn next to the skin was thoroughly laundered and dried before being worn. After the bath all patients were instructed to massage lightly a thin film of the ointment into all areas involved. The bath was repeated every three days. The routine was repeated for two weeks and then discontinued.

#### Treatment of Cutaneous Fungous Infections in Phenylsalicylamide Derivative.

F. KEDDIE, G. F. HEXTER AND A. S. BROWN (*Arch. Dermat.*, November, 1956) studied the use of "Bynamid" as an antifungal therapeutic agent. "Bynamid" is a fluorescent, odourless, non-toxic chemical belonging to the family of salicylamides. It is effective *in vitro* and *in vivo* against the common dermatophytes. Its penetration into the skin and hair follicles is greatest where the skin is thin and healthy. Its penetration is poor where infection is protected by thick overlying keratin of the hands and feet, by the nails, or by infected hair follicles.

#### Yeast Vulvo-Vaginitis.

O. F. JILLSON AND J. S. LYLE (*Arch. Dermat.*, November, 1956) state that the diagnosis of yeast vulvo-vaginitis can be made clinically in over 90% of cases. There is severe *pruritus vulvae* of short duration. The skin of the perineum and perianal areas is nearly always involved. Here are found, in many cases, small flaccid vesiculo-pustules—like balloons partially deflated. Vulvo-vaginitis due to yeast may or may not be associated with skin lesions of moniliasis. The characteristic clinical picture consists of white flecks of cheesy material found in the vagina and on the cervix, whether loosely or firmly adherent to the mucosa. This material is used to verify the clinical diagnosis. The differential diagnosis between trichomonas vaginitis and yeast vulvo-vaginitis is discussed. In order to treat yeast vulvo-vaginitis successfully

the following facts should be remembered: (a) The male on rare occasions is the primary source of yeast vulvo-vaginitis, in which case he may be a diabetic. (b) Yeast organisms causing vulvo-vaginitis are not normal inhabitants of the vagina; the source of infection is probably the intestinal tract, where pathogenic *Candida* is a normal inhabitant. (c) Cases may be found in older women who are on oestrogen therapy. (d) Many cases will be found in association with pregnancy, and treatment may have to be prolonged. (e) A blood sugar test performed two hours after breakfast may detect latent diabetes and thereby the predisposing factor of yeast *pruritus vulvae*. (f) If the yeast vulvo-vaginitis is precipitated by antibiotic therapy, there will be a history of bowel frequency and associated *pruritus ani*. Vulvo-vaginitis may appear a few days, weeks or months after these gastro-intestinal complaints. As regards treatment, since the gastro-intestinal tract is the probable source of infection, it is important to cut down the yeast population there. The authors give nystatin tablets ("Mycostatin" 500,000 units) twice daily for ten days. Nystatin vaginal tablets are excellent to control the vaginal disease. One tablet is inserted in the vagina twice a day for two weeks, and thereafter one tablet daily for another week or two. The patient should be warned to expect soreness and pain a day or two after treatment is instituted. In treatment of the cutaneous lesions three tablets of nystatin in two ounces of shake lotion or 3% salicylic acid in 30% isopropyl alcohol is almost always effective. In the treatment of the male, circumcision may be necessary in the severe diabetic; otherwise 0.125% silver nitrate solution is invariably effective.

#### Nystatin ("Mycostatin") in the Treatment of Monilial and Non-Monilial Vaginitis.

H. R. PEARCE AND S. I. SCHANTZ (*J.A.M.A.*, September 22, 1956) state that *Candida albicans* infection was demonstrated in 59 out of 76 patients who had symptoms of vaginitis. Treatment with nystatin tablets inserted vaginally at bedtime cured the moniliasis in 58 cases. The infection recurred in 14 cases, but was eradicated by a second course of treatment. Nystatin was not as a rule effective in trichomoniasis, but in moniliasis it relieved the pruritus promptly and caused no side effects. The optimum dose appears to be two tablets daily inserted into the vagina for seven days. The nystatin tablets each contained 100,000 units of nystatin. No douche was prescribed or used during therapy.

#### Pyoderma Gangrenosum: Report of a Case Controlled by Cortisone.

E. T. WRIGHT AND D. J. GRECO (*Arch. Dermat.*, November, 1956) state that the ulcers of *pyoderma gangrenosum* have developed following surgical wounds, abrasions, contusive lacerations, insect bites and gunshot wounds. They have also been observed to occur in association with ulcerative colitis. A number of different organisms have been found in these ulcers, including *Staphylococcus aureus*, *Proteus vulgaris*, *Pseudomonas*

*pyocyanea*, non-haemolytic *S. albus*,  $\beta$  haemolytic streptococci, *Escherichia coli* and secondary saprophytes. The clinical appearance of these ulcers is usually quite characteristic. An ulcer develops as a result of a break in the skin from any cause. It enlarges peripherally and is usually painful. There is a bright red base with a characteristic margin; this has an outer erythematous halo, inside of which is a swollen purplish collar. The inner portion of this collar merges with a ring of dark gangrenous skin, which is sometimes undermined. Various types of treatment have been used, with at times only equivocal results. Some writers consider that the only effective treatment is surgery. The authors report a case which was successfully controlled by the use of cortisone. The patient had hypogammaglobulinemia. The possible mechanism of the beneficial effects of cortisone is discussed.

#### Treatment of Chondrodermatitis Helicis with Local Injections of Hydrocortisone.

A. BUCHHOLTZ (*Arch. Dermat.*, November, 1956) gives the histories of two patients suffering from *chondrodermatitis helicis* who were treated with local injections of hydrocortisone. On June 8, 1955, 2.5 milligrammes of saline suspension of hydrocortisone acetate were injected into the nodule. Two weeks later the patient returned; the nodule then showed 50% reduction in size, and the patient stated that the pain had almost completely disappeared forty-eight hours after the injection. A second injection was given, and two weeks later the nodule was completely gone. No recurrence had taken place when the patient was examined six months later. In the other patient three injections were necessary to obtain a cure, the injections of 2.5 milligrammes of a saline suspension of hydrocortisone acetate being given on September 9, September 29 and October 14, 1955. The patient was examined in January, 1956, and no recurrence had taken place.

### UROLOGY.

#### Tolerance of the Bladder to Irradiation.

N. R. MACKAY (*J. Urol.*, October, 1956) draws attention to the dangers attendant on administering large doses of radiation to the bladder wall by intravesical methods. These methods are usually employed only in treating small, non-infiltrating, superficial, diffuse, and multiple mucosal neoplasms, where a sharp fall-off in depth dose is advantageous. This requirement is met by using radioactive solutions contained within a "Latex" balloon; they give a steeper fall-off in depth dose and a more homogeneous irradiation of the mucosa than a control source of irradiation. Radioactive sodium or bromine was used in treating 77 patients. High intensity irradiation delivered as a single dose of 3000r to 4000r of  $\gamma$  radiation in four to six hours, or three fractions each of 2000r of  $\gamma$  radiation, given over two to three hours to a total dose of 6000r

in fifteen days, can cause irreparable mucosal damage with infiltration, bleeding and fibrosis. On the other hand, low intensity prolonged irradiation, giving surface doses of about 5000r of  $\gamma$  radiation by continuous irradiation over four days, caused no damage.

### Treatment of Testis Tumours.

A. L. DEAN (*J. Urol.*, October, 1956) sets out to describe the treatment of testis tumours with irradiation and radical surgery. He states that at the present time there is general acceptance of the view that irradiation is most satisfactorily applied by using the million-volt X-ray unit. Suggested maximal tumour doses vary between 4000r and 4500r delivered over four to five weeks. The tumour dose depends on the type of neoplasm. A reasonably accurate prediction of the radiosensitivity can be made when the histological type of the primary growth is determined from biopsy (after a simple operation as a necessary but only minor part of the whole treatment). The present study gives the five-year end results in 990 testis tumours treated by many urologists between 1934 and 1944. Radiation was used in most, though radical surgery was employed in a substantial proportion. Detailed analyses are not yet available, but there has been a gratifying general improvement in results compared with earlier reports. Part of this improvement has been due to earlier diagnosis. The general outline of results is as follows: seminomata (40% incidence), survival rate for five years, 89.5%; embryonal carcinomata (30% incidence), five-year survival 35.5%; teratocarcinomata (incidence 19%), five-year survival 48%; adult teratomata (incidence 9%), five-year survival 61%; choriocarcinomata (incidence 1% to 4%), five-year survival nil. The methods of treatment have been as follows: (i) Seminomata. These are some of the most radiosensitive of all neoplasms. A tumour dose of 2500r over three weeks is adequate and safe. One should not hesitate to irradiate secondary lung deposits with a fair expectation of permanent cure. Apart from a simple orchidectomy, open surgery seems unnecessary. (ii) Choriocarcinomata. These neoplasms are radioresistant, and spread early and widely through the bloodstream and lymphatics. They are therefore unsuitable for either open surgery or irradiation. (iii) Embryonal carcinomata and teratocarcinomata are also unfortunately very radioresistant. Radical surgery may be useful before metastases occur, but the benefits are doubtful. (iv) Adult teratomata. These are mostly benign, but sometimes contain unrecognized malignant elements which produce radioresistant metastases. Therefore it is safer to consider the tumour malignant. The best method is to treat these as well as embryonal carcinomata and teratocarcinomata in the following way. As soon as biopsy shows that the neoplasm is in one of these divisions, a tumour dose of 4000r to 4500r is given over four to five weeks to all lymphatic channels between the groin and the level of the tenth thoracic vertebra; this is provided that the lungs show no metastases. About four weeks after irradiation, if the lungs are clear, radical

lymphatic dissection is performed. If lymphatic masses are felt beyond the irradiated areas, full doses of irradiation must follow over these areas.

### A New Operation for Urinary Diversion.

T. H. JOHNSON (*J. Urol.*, October, 1956) summarizes results and changes in surgical techniques since he and the late O. S. Lowsley first described a new operation for urinary diversion in 1955. The first patient in this series of 17 cases was operated on two years and nine months before the publication of the present paper. In this series there were two deaths, giving a mortality rate of about 18%. The statistics here are deceptive, and the author considers that the evidence shows that the procedure is safer than the figures indicate, for two reasons: (i) all cases were of far advanced carcinoma of the bladder, and most of the patients were "poor surgical risks"; (ii) the three deaths occurred in the first five cases, the first two patients being still alive. With improved technique and surgical speed, it is to be noted that the subsequent twelve patients all made good recoveries. The operation is as follows: (i) the rectum is excluded from the alimentary tract above it, and the ureters are implanted into its upper end; (ii) the sigmoid mesentery is dissected to mobilize the sigmoid colon; (iii) through a perineal incision, immediately anterior to the anus, dissection is carried under the external sphincter to the rectovesical pouch; (iv) the liberated sigmoid colon is drawn out within the external sphincter to the surface of the perineum. Various complications are described, with the methods necessary to avoid them. The object of the operation is to secure a urinary stream which is separate from the faecal outflow, with good continence for both. Urinary control is usually good, and immediate; but faecal control is the crucial test; it requires some learning, and about two weeks are needed for this.

### Sarcoma of the Bladder.

L. E. MCCREA AND E. A. POST (*Urological Survey*, October, 1955) have undertaken a review of cases of sarcoma of the urinary bladder reported in the literature. These, together with one of their own cases, total only 288. The disease is therefore rare, though not exceedingly so. However, Caulk, in a survey of 303 bladder neoplasms, reported only one case of sarcoma. The authors believe, nevertheless, that many cases have gone unreported, and that the disease occurs more often than is generally thought. Analysis of all reported cases reveals an astonishing variance of age of patients; in the youngest reported subject the age was only three days; the oldest patient was eighty-two years of age. The average age was twenty-six years. The disease occurs twice as frequently in males as in females. There is a good deal of variance and confusion in the microscopic pictures. The terminology used in the histogenetical classification proclaims the tissue of origin of the neoplasm, and is therefore more informative. The terminology of the cytological classification is merely a description of the microscopic picture,

and is therefore not very informative as to origin. The treatment varied in practically every case reported. However, regardless of the type of neoplasm, or of the extent of surgical procedures, the end result was almost universally poor. Only seven patients out of the 288 survived five years. Sarcoma of the bladder is therefore a devastating and fatal disease.

### SURGERY.

#### Wound Healing and Ascorbic Acid Deficiency.

L. EDWARDS (*Ann. Surg.*, September, 1956) planted a polyvinyl alcohol sponge in various tissues in guinea-pigs, half of which were placed on a standard scorbutogenic diet. He concluded that in ascorbic acid deficiency, fibroplasia, mucopolysaccharide production and the formation of reticular precollagen material are not inhibited and may be considerably increased. He stated that the basic defect of repair in ascorbic acid deficiency appears to be one of collagen synthesis. Evidence shows that this defect can be corrected within twenty-four hours following the intramuscular administration of ascorbic acid.

#### Closed Chest Injury.

J. FORSEE, H. BLAKE AND E. GOYETTE (*Surgery*, October, 1956) state that unsuspected severe intrathoracic injury may follow minimal trauma to the chest wall. Traumatic lung cavitation, traumatic aortic aneurysm, obstruction of the great vessels and cardiac contusion may occur after minor trauma to the chest wall. Sometimes the trauma is so minor that the diagnosis of intrathoracic injury may not even be considered at the initial observation. Patients who have incurred thoracic trauma, no matter how minor, should have a chest X-ray examination and a follow-up period after apparent initial recovery.

#### The Surgical Approach to the Biliary Passages.

H. A. HACTON AND E. A. McVERRY (*Brit. J. Surg.*, September, 1956) have performed 200 operations on the gall-bladder and bile ducts using a median epigastric incision with the surgeon standing on the patient's left side. They consider that the method has definite advantages over the traditional routes. The left hand is used for palpation about the gall-bladder and the biliary tract and is also in position to squeeze impacted gall-stones out of the duodenal portion of the duct. If cholecystectomy is decided upon, a pack is placed behind the surgeon's left hand. The pack controls the stomach and intestines and also imposes a downward pressure on the duodenum. This places the common duct on the stretch. A Deaver retractor is held in the upper part of the wound so as to overlie the quadrate lobe and hold the falciform ligament out of the line of vision. The fingers of the left hand assist in the dissection of the ducts and other structures, and tend to reduce the risk of damage to important structures. Straight artery forceps are applied to the cystic duct and artery.



## Medical Societies.

### PEDIATRIC SOCIETY OF VICTORIA.

A MEETING of the Pediatric Society of Victoria was held at the Royal Children's Hospital, Carlton, on June 13, 1956.

#### Kinnear Wilson's Disease.

DR. J. PERRY and DR. A. WILLIAMS presented the clinical, biochemical and morbid pathological details of a case of Kinnear Wilson's disease. This will be reported in full at a later date.

#### Myofibroma of the Stomach.

DR. V. COLLINS presented the clinical details of a case of leiomyoma or fibromyoma of the stomach in a female child, aged fourteen months. He said that the condition usually occurred in adults between forty and sixty years of age, and was extremely rare in childhood. He could find no record of a previous case in infancy and had found only one reference to leiomyoma of the stomach in a child aged nine years in a very extensive review of the subject by Palmer in 1951. Patients with the condition usually presented either with hæmatemesis or with upper abdominal pain and dyspepsia.

In the present case the child had first presented in the out-patient department at the age of eleven and a half months, with symptoms dating back to eight months of age. She had been vomiting after feeding for the past two months and had been irritable and difficult to manage during that time. She was pale, and the hæmoglobin value was 52% (7.5 grammes per centum). The tip of the spleen was thought to be palpable. She was regarded as having a nutritional anaemia and was treated with iron. Her birth had been two months premature, and the birth weight three pounds ten and a half ounces. Her weight at ten months of age was fifteen pounds seven ounces.

Two and a half months after she had first come to the hospital, her hæmoglobin value was still only 50% (7.3 grammes per centum), and she was admitted to hospital for further investigation. At thirteen months her spleen was thought to be easily palpable one finger's breadth below the left costal margin. Blood examination showed a hæmoglobin value of 48% (6.8 grammes per centum), a white cell count of 21,600 per cubic millimetre with 64% neutrophile cells, 34% lymphocytes and 2% eosinophile cells. The red cells showed anisocytosis and hypochromia. The X-ray appearance of the chest was within normal limits, and that of the long bones normal. The result of a Mantoux test was negative, and microscopically the urine was normal. The serum iron content was 84 milligrammes per 100 millilitres, the latent iron-binding capacity 150 milligrammes per 100 millilitres, the total iron-binding capacity 284 milligrammes per 100 millilitres, and the percentage saturation 64. That suggested that the condition was not a true iron deficiency anaemia, but was probably due to an infection. Bone marrow biopsy showed normal cellular marrow. The patient was usually afebrile with an occasional evening temperature of 100° F. She was given a blood transfusion of 300 millilitres and discharged to her home.

Four days later, now aged fourteen months, she was readmitted with a history of an increasing cough over the past four days. There was dullness at the base of the left lung with crepitations over that area. It was thought that an enlarged spleen could be felt one and a half fingers' breadth below the left costal margin. A diagnosis of left lower lobe pneumonia was made. Blood examination at this stage showed a hæmoglobin value of 75% (10.9 grammes per centum), a white cell count of 17,400 per cubic millimetre with 72% neutrophile cells, 26% lymphocytes and 2% monocytes. X-ray examination of the chest showed consolidation and partial collapse of the lower lobe of the left lung. Four days later, X-ray examination of the chest showed extensive bronchopneumonic changes throughout the whole of the left lung and a large pneumatocele present in the lingular area. Though a *Staphylococcus aureus* sensitive to penicillin was isolated from the sputum, she failed to respond to penicillin and later to tetracycline, but her temperature finally subsided when erythromycin was given. Eight days after admission to hospital her temperature was normal, and she began to improve, though the left lung was radiologically unaltered ten days after admission. Two weeks after admission the pneumonia was lessening, but she was still losing weight, and certain questions arose concerning her condition: What was the nature of the "spleno-

megaly" or tumour palpable below the left costal margin? What was the cause of the persistent left lower lobe pneumonia and its relation, if any, to the tumour? What was the relation of those to the child's previous anaemia?

Dr. Collins said that when he examined the child at that stage, he considered that the mass under the left costal margin was almost certainly not an enlarged spleen, though the edge was sharp and felt like a spleen with an irregular firm margin. He had described it at that time as having an irregular margin, running almost parallel with the left costal margin from the outer part of the upper part of the abdomen to within one and a half inches of the mid-line, and one inch below the left costal margin. It was solid deep to that irregular margin. It did not move as usual with respiration. In reviewing previous X-ray films it was noted that the left diaphragm was consistently raised. He considered at that stage that a neoplasm or possibly a left subphrenic abscess was present. Her chest was then screened, and the radiologist confirmed the presence of a persistently raised left diaphragm, which was found not to move with respiration; it was considered that the stomach was displaced to the right by a large mass below the diaphragm. A barium meal examination showed that the distal end of the oesophagus was compressed and distorted to the right of the mid-line, while the fundus of the stomach was pushed downwards and to the right. Faint irregular calcification was noted to be present anteriorly just above and to the left of the displaced stomach.

Dr. Collins said that at that stage a neuroblastoma was thought to be the right diagnosis. A surgical opinion had been sought at an earlier stage before the barium meal examination had been carried out, and now Dr. Russell Howard decided to operate. A large tumour, firmly attached to the spleen and attached to the fundus of the stomach was removed with the spleen and a portion of the stomach. That, as described by Dr. Alan Williams, proved to be a myofibroma or leiomyoma of the stomach.

As a result of the surgical treatment, the child made a good recovery. When seen recently, twelve months after the operation, at the age of two years and three months, she had appeared very well and weighed twenty-three and a half pounds, and there was no abnormality to be found on examination.

DR. ALAN WILLIAMS said that the tumour measured 8.0 centimetres by 4.5 centimetres by 5.0 centimetres and weighed 265 grammes. The spleen, which was of normal size, was attached to but not infiltrated by the tumour, and was dissected from it without difficulty. Attached to the upper surface of the tumour was a small portion of the stomach. That contained an ulcer and could not be separated from the tumour. Apart from the area where it had been separated from the liver, the tumour was encapsulated.

On section the cut surface was pink and firm and had a whorled appearance. A central necrotic area was present and contained areas of calcification.

In histological preparations, whilst some areas were seen to consist mainly of avascular collagenous tissue, others consisted of elongated cells with a large amount of cytoplasm and pleomorphic nuclei. The morphology of those cells suggested a tumour of muscle origin, and from a study of sections which included the stomach wall it did appear as if the tumour arose from the muscle coats of that viscus. No mitotic figures were observed in many sections examined, and the histological diagnosis was leiomyoma of the stomach.

Slides were used to demonstrate the macroscopic and microscopic features.

DR. R. HOWARD said that when he saw the patient he had thought there was some evidence for the diagnosis of neuroblastoma of the left adrenal. Laparotomy was needed, and at operation a tumour was found to be filling the upper left side of the abdomen. The tumour was in the lesser sac and adherent to the liver, spleen and diaphragm. The spleen was removed, and the tumour separated from liver and diaphragm. However, it could not be separated from the posterior wall of the stomach, and quite a large portion of the latter organ had to be removed. The tumour was ulcerating into the stomach. It seemed malignant, but was not actually infiltrating other organs.

DR. H. HILLER showed X-ray films of the appearance of one of these tumours in an adult. The patient was a young woman presenting with melena. One could see the tumour mass extending into the stomach, with an ulcerated area in the middle. He said that calcification in abdominal tumours had not been commonly seen in Melbourne in children. He



had thought the tumour in the present case was probably a neuroblastoma. It was not quite in the position for a Wilms tumour.

#### Streptococcal Septicæmia.

DR. S. WILLIAMS presented the clinical details of two cases of streptococcal septicæmia. He said that the views expressed recently by Professor Hugh Ward, to the effect that the mechanism of the cause of acute rheumatic fever was not known, stimulated the hypothesis that there might be some similarity in the pathogenesis of acute rheumatic fever to the sequence of events illustrated in the two children suffering from streptococcal septicæmia. In the acute phase of rheumatic fever it was accepted that the *Streptococcus pyogenes* was not to be found in the bloodstream. However, workers in England were able to demonstrate the *Streptococcus pyogenes* in the internal organs and in the heart lesions in post-mortem examination of patients dying in the acute stage.

The first case was that of a girl, aged nine years and five months, who had been admitted to the Royal Children's Hospital in October, 1953, with a history of fever and joint pains for two weeks. She was afebrile at that time. Within two days she became febrile, and the temperature did not respond to salicylamide, grains 15, given four-hourly. The spleen was palpable, and red blood corpuscles were detected in her urine; so that, bacterial endocarditis being suspected, a blood culture was prepared. This revealed  $\beta$  hemolytic streptococci, which were sensitive to penicillin, sulphadimidine and streptomycin. Intramuscular injections of penicillin, 500,000 units, and 100 milligrammes of streptomycin were given every six hours. In three days the temperature returned to normal, and streptomycin therapy was discontinued. The penicillin dosage was increased to 1,000,000 units every six hours.

Changes were noted in her heart, in that a diastolic murmur was heard, and X-ray examination showed an increase in the left border, presumably due to enlargement of the left atrium; that had remained. In the first week she also had a phlyctenular conjunctivitis, which responded to cortisone eye drops. Penicillin administration was stopped after four weeks, and the results of six blood cultures over a period of three weeks were negative. She was transferred to the convalescence annexe and gradually allowed full activity.

Since then she had attended the out-patient department and had taken 200,000 units of penicillin orally, twice daily. In May, 1955, radiological examination showed the left auricle and left auricular appendage to be enlarged, and the remainder of the heart appeared to be normal. A mid-diastolic murmur could be constantly heard, and it was possible that she had mitral stenosis. The girl, now aged twelve years, led a reasonably normal life at home and at school, but did not take part in strenuous sport.

The second case was that of a boy, aged eight years, who had been admitted to the Royal Children's Hospital in February, 1956, with a history of three weeks' malaise following a slight illness and a rash lasting two days. Four days before admission to hospital he had had a severe rigor, and his spleen was palpable. A systolic murmur was heard, and his temperature was 102° F. He complained of frequent shivers and pain in the legs. On his admission to hospital blood for culture was taken, and from it group A streptococci were grown. Subsequent typing of the streptococcus showed it to be Type 2. It was sulphonamide-resistant. The boy responded well to 500,000 units of crystalline penicillin given three-hourly. After nine days he was given 1,000,000 units of procaine penicillin twice daily, but a slight rise in temperature caused a change back to crystalline penicillin in a dose of 1,000,000 units six-hourly. Penicillin injections were stopped after twenty-eight days' treatment, and he was then given 500,000 units of penicillin twice daily by mouth. The systolic murmur disappeared after one week of treatment, and the boy appeared to be very well. The radiological appearance of his heart was reported to be normal.

After six weeks in hospital he was allowed home to increase his activity gradually, and had remained well since then. The results of radiological and clinical examination of his heart were now normal. He would continue to receive prophylactic penicillin tablets 200,000 units twice daily.

Dr. Williams said that the two cases illustrated the fact that streptococcal septicæmia did occur in childhood, and both children showed features similar in some respects to those of acute rheumatic fever. The first child gave no history suggestive of previous rheumatic fever, yet her

heart changes were similar to those seen in many children with that disease. The accepted explanation of septicæmia in such a case was that the streptococci grew on mitral valves previously damaged by an earlier attack of rheumatic fever; but it seemed possible the illness described was the first suffered by the child to cause damage to the heart.

The second child seemed to have had a comparatively mild illness, and it was too early to say that there was not some degree of endocarditis following the acute episode.

Prophylactic penicillin therapy was of value in such cases, as it was after acute rheumatic fever.

DR. R. SOUTHBY asked whether the leucocyte count was raised.

Dr. Williams, in reply, said that it was raised in both cases.

Dr. M. POWELL expressed the opinion that in the first case there was probably a rheumatic heart condition before the septicæmia occurred. One could have valvulitis without any definite history of rheumatism preceding it. Regarding the second case, he thought that in a severe illness such as that, if there had been a rheumatic basis the patient would have been left with some evidence of valve damage.

#### Salmonella Septicæmia.

DR. M. ROBINSON, in presenting details of a case of salmonella septicæmia, said that those who had the care of infants suffering from infective enteritis were invariably impressed by the protean clinical manifestations of the salmonella organism. For example, infantile salmonella enterocolitis might present as a state of toxæmia, as pneumonia, as an "acute abdomen", or even as meningitis. Despite those variable early symptoms, it was very uncommon, apart from *S. typhi* infection, for generalized dissemination to occur.

In the literature there were quite a number of isolated reports of salmonella septicæmia, but he had been unable to find any authoritative review and summary. Rabe had described eight cases of salmonella septicæmia occurring in an eighteen-month period. In regard to salmonella osteomyelitis, Glacal and Idriess had found only 27 cases in the literature of salmonella osteomyelitis occurring as a complication of salmonella infection, again including the *Salmonella typhi*.

Dr. Robinson then reported the clinical details of a case of *Salmonella typhimurium* septicæmia, complicated by osteomyelitis. The patient was a male baby, aged seven weeks, who had been admitted to the Royal Children's Hospital with a history of diarrhoea for two days. The stools, numbering ten to eleven per day, had been large, green and slimy during that period. Increasing pallor and blueness were noted on the day of admission to hospital, and he had been increasingly difficult to feed. Another member of the family had diarrhoea at that time.

On admission to hospital, the baby was obviously dehydrated, with a subnormal temperature, sunken eyes, poor tissue turgor and cyanosed extremities. Apart from those findings physical examination revealed no abnormality. A provisional diagnosis of severe infective enteritis was made, and intravenous therapy commenced.

The child was extremely ill initially, and intravenous administration of saline and serum was required during the whole of the first five days. Also, despite limitation of oral intake to small quantities of glucose water, severe diarrhoea with blood and mucus in the stools persisted. Serum sodium and potassium depletion noted at that stage were duly corrected; and because the child was in *extremis*, 65 milligrammes of chloramphenicol were given six-hourly after the first twenty-four hours. However, after four days, when no improvement had occurred and a salmonella was isolated from the stools, that was discontinued.

Six days after admission to hospital the infant was still ill, with rapid respirations and a large liver; the clinical picture suggested myocarditis. That was not confirmed radiologically or by electrocardiography, and on the following day scattered purpuric spots were noted on the trunk. The purpura was thrombocytopenic and thought to be due to chloramphenicol, particularly as it was associated with an anæmia with a hæmoglobin level of 7.5 grammes per centum. However, that assumption was probably incorrect.

Feedings of skimmed milk were started, and diarrhoea and dehydration resulted. The serum electrolytes, blood urea content and microscopic appearances of the urine were normal, and the baby was given a transfusion. Thrombophlebitis of the right leg, associated with cellulitis and

possibly osteomyelitis of the right tibia, was thought to be the cause of the temperature at that stage. After blood for culture and a swabbing of the abscess had been taken, tetracycline therapy was commenced.

Four days later, *Salmonella typhimurium* was recovered from the blood and the abscess, and the diagnosis was clear. The salmonella was found to be sensitive to streptomycin in high dosages, chloramphenicol and tetracycline. In view of the history of purpura it was decided to continue tetracycline therapy. However, three days later a tender, red-den and painful right shoulder appeared. Clinically osteomyelitis of the upper humerus was suspected, and that was confirmed radiologically. It was then decided to commence intravenous administration of chloramphenicol, 250 milligrammes daily, with 80 milligrammes of streptomycin given intramuscularly twice a day.

Needle aspiration of the shoulder joint was performed, but no pus was obtained. Intravenous therapy was continued for three days and was discontinued only because of the lack of veins. One hundred and twenty-five milligrammes of chloramphenicol were given six-hourly by mouth for four days; then the dosage was reduced to one hundred milligrammes six-hourly and again to fifty milligrammes six-hourly until a three weeks' course had been given. Several platelet counts were made during that time, and all the results were normal.

Coincidental with the onset of chloramphenicol therapy, the baby's general condition began to improve, and the temperature and diarrhoea subsided, as did the shoulder swelling. X-ray examinations in that period showed no further progression of bone destruction.

With cessation of chloramphenicol therapy, lethargy, anorexia and diarrhoea recurred within five days, and the baby lost weight. An X-ray examination showed increased bone destruction, the head of the humerus having disappeared. Chloramphenicol therapy was recommenced, and the improvement in general condition was quite dramatic. Chloramphenicol on that occasion was given with cortisone, and therapy continued for the next five and a half weeks. Serial X-ray examinations showed progressive bone consolidation, the blood was sterile on culture, but the organism could still be isolated from the stools.

After five and a half weeks, when the temperature had remained normal for several weeks, diarrhoea had ceased, and the weight was increasing, immobilization of the shoulder was stopped. Pain was absent, but shoulder movement was definitely restricted.

When discharged from hospital the baby was well and had gained a considerable amount of weight, but movement at the shoulder joint was considerably restricted.

Dr. Robinson concluded by saying that the therapy of salmonellosis was a difficult problem. Sensitivity tests *in vitro* in the present case had not been helpful in guiding therapy, and that fact had been remarked upon in the literature, where it was recorded that, despite *in-vitro* sensitivity to tetracyclines and chloramphenicol, clinical response was usually obtainable only with chloramphenicol.

The osteomyelitis in the present case conformed reasonably well to descriptions of salmonella osteomyelitis found in the literature. *Salmonella* osteomyelitis was said to have a special propensity for the long bones, particularly the femur and humerus, and it had not the same propensity for the metaphysis but rather for the diaphysis or epiphysis. The osteomyelitis was not found to be as destructive as that associated with the coccal forms. There was less necrosis and sequestration with a tendency to healing even without antibiotic therapy.

Dr. A. VENABLES said that he had been involved in the care of three other patients with salmonella septicemia. The first had had chronic salmonellosis with recurrent cervical adenitis, the second osteomyelitis of the humerus, and the third a typhoid-like illness with enlargement of liver and spleen. The first had died with suppuration of lymph glands in all areas of the body and the spleen; the other two had recovered. It seemed that even a high concentration of chloramphenicol was incapable of eradicating salmonella from all parts of the body, and it was impossible to sterilize the gut.

Dr. S. WILLIAMS said that the difficulty in eradicating the salmonella organism was similar to what was found in typhoid fever. The typhoid organism must be attacked when it was in the blood, or the response to chloramphenicol was not good. If the history was longer than seven days, it was very difficult to deal with the organism with chloramphenicol, and in the established carrier state chloramphenicol did not seem to be effective.

## THE AUSTRALASIAN CARDIAC SOCIETY.

THE annual meeting of the Australasian Cardiac Society will be held at Brisbane on Monday and Tuesday, May 27 and 28, 1957. The scientific sessions, unless otherwise stated, will be held at the Main Lecture Theatre, Medical School, Herston, and the provisional programme is as follows:

Monday, May 27: 11 a.m., "Chronic Irreversible Beriberi Heart Disease", Dr. R. B. Blacket; 11.30 a.m., "Left Ventricular Hypertrophy: Its Definition and Measurement", Dr. J. M. McPhie; 12 noon, "Kinking of the Aortic Arch", Dr. Bernard F. Vaughan (introduced) and Dr. Cyril Fortune; 2 p.m., "Oxygen Diffusion at the Blood Gas Interface: A New Method of Appraisal", Dr. K. L. Cotton (introduced); 2.30 p.m., "Pulmonary Compliance in Mitral Stenosis", Dr. B. C. Sinclair-Smith; 3 p.m., "The Exercise Test in Doubtful Cases of Angina", Dr. Ralph Whishaw; 3.30 p.m., "A Case of Acquired Wolff-Parkinson-White Syndrome", Dr. E. H. Roche.

Tuesday, May 28: 9.30 a.m., "The Familial Factor in Congenital Heart Disease", Dr. Cyril Fortune; 10 a.m., "Phonocardiography in the Diagnosis of Congenital Heart Disease", Dr. J. M. Gardiner; 10.30 a.m., "Use of a Radioactive Variation of the Dye Dilution Curve in the Investigation of Atrial Septal Defects", Dr. E. P. George and Dr. J. B. Hickie (introduced), and Dr. W. A. Seldon; 11.15 a.m., "Absence of the Left Pulmonary Artery", Dr. E. J. Halliday; 11.45 a.m., "The Use of the Pump-Oxygenator in Open-Heart Surgery", Dr. Kenneth N. Morris; 2 p.m., clinical meeting, Brisbane General Hospital.

Inquiries should be directed to the Honorary Secretary and Treasurer of the Society, Dr. J. M. Gardiner, at the Alfred Hospital, Commercial Road, Prahran, S.1, Victoria.

## Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

### PERUVIAN BARK<sup>1</sup>

(Surgeon Worgan to Governor Phillip.)

Deptford 23 November 1786.

Sir,

From the experienced utility of Peruvian Bark in ships stationed on the coast of Guinea and in similar climates, it would seem a very necessary article in the present intended expedition: but from the high price of the drug Navy Surgeons cannot afford the vast quantity required to do justice to the men without wronging themselves: therefore I humbly beg Sir that you will move for a proportionate supply to the number of men on board the *Sirius*.

I am &c.,

G. B. WORGAN,  
Surgeon to the *Sirius*.

## The College of General Practitioners.

### QUEENSLAND FACULTY.

#### Post-Graduate Week-End at Broadbeach.

THE Queensland Faculty of the College of General Practitioners will hold a post-graduate week-end at Broadbeach from Friday to Sunday, May 3 to 5, 1957. The week-end is open to all medical practitioners, whether members of the College or not. Inquiries should be addressed to Dr. W. J. Hamilton, Honorary Secretary, Box 1498V, G.P.O., Brisbane. Telephone: XA 3661 (Brisbane). The scientific programme is as follows:

Friday, May 3: 8 p.m., registration and informal party.

<sup>1</sup> From the original in the Mitchell Library, Sydney.

Saturday, May 4: 9.30 a.m., "Progress in Paediatric Therapeutics", Professor Lorimer Dods; 11 a.m., "The Therapeutic Indications for Cortisone and its Derivatives", panel discussion: Dr. Kurt Aaron (chairman), Dr. R. W. Hawker, Dr. L. D. Walters, Dr. Lorna M. Archibald.

Sunday, May 5: 9.30 a.m., "The Modern Treatment of Hypertension", panel discussion: Dr. Kurt Aaron (chairman), Dr. R. W. Hawker, Dr. R. F. O'Shea, Dr. C. A. C. Leggett. 11 a.m., "Some Everyday Paediatric Problems", Professor Lorimer Dods.

## Post-Graduate Work.

### THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

#### Post-Graduate Conference at Newcastle in Gynaecology and Obstetrics.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that, in conjunction with the Central Northern Medical Association, the gynaecological and obstetrical section of the 1957 Post-Graduate Conference will be held in the Lecture Theatre, Royal Newcastle Hospital, on Saturday and Sunday, April 27 and 28, 1957. The programme is as follows:

Saturday, April 27: 2.30 p.m., registration; 2.45 p.m., "The Induction of Labour: Indications and Methods", Dr. P. McLaughlin; 4.30 p.m., "Some Problems of the First Trimester of Pregnancy", Dr. R. J. F. McInerney.

Sunday, April 28: 10 a.m., "Vaginal Discharges", Dr. R. J. F. McInerney; 11.30 a.m., "Hormones in Gynaecology and Obstetrics".

#### Post-Graduate Conference, 1957.

The medical section of the 1957 Post-Graduate Conference will be held in August and the surgical section in October. The combined fee for attendance will be £3 3s., or £1 1s. for

each section. Those wishing to attend are requested to notify Dr. Craig Horn, Honorary Secretary, Central Northern Medical Association, 17 Bolton Street, Newcastle, as soon as possible. Telephone: Newcastle B 2808.

#### Course in Advanced Medicine.

The Post-Graduate Committee in Medicine in the University of Sydney announces that a course in advanced medicine suitable for candidates for the examination for membership of The Royal Australasian College of Physicians will be held for a period of eleven weeks from June 3 to August 17, 1957. The course will be given in the afternoons from Monday to Friday and on Saturday mornings.

It is desirable that candidates should have had considerable experience in clinical work, either in hospital or in medical practice, before considering themselves prepared to take examinations for higher medical degrees or diplomas. The course will be found of value to practitioners intending to devote further time to acquiring such experience before taking the examination, and to those who are not seeking higher qualifications, but are anxious to widen their knowledge of internal medicine. It is expected that students will devote considerable time to the reading of text-books and current medical literature.

The fee for attendance is £31 10s., payable in advance at enrolment date, and early application is desirable. Enrolment can be made for the whole or portion of the course. Applications should be sent to the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney, from whom further particulars may be obtained. Telephones: BU 4497-8. Telegraphic address: "Postgrad Sydney."

#### Diploma in Clinical Pathology.

The Post-Graduate Committee in Medicine in the University of Sydney announces that a course for Group I of the Diploma in Clinical Pathology is due to begin on July 15, 1957, and continue for a period of seven months. The courses for Groups II and III will begin after this date.

The fee for attendance at all groups is 60 guineas. Further details concerning the course may be obtained from the

### DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED MARCH 30, 1957.<sup>1</sup>

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism .. ..	4(1)	1(1)	4	2(1)	..	..	..	..	11
Amebiasis .. ..	..	..	..	1(1)	..	..	..	..	1
Ancylostomiasis .. ..	5	..	8	..	..	..	..	..	13
Anthrax .. ..	..	..	..	..	..	..	..	..	..
Bilharziasis .. ..	..	..	..	..	..	..	..	..	..
Brucellosis .. ..	..	1	..	..	..	..	..	..	1
Cholera .. ..	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus) .. ..	..	..	..	..	..	..	..	..	..
Dengue .. ..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile) .. ..	4(4)	9(9)	..	..	..	..	1	..	14
Diphtheria .. ..	3(3)	2(2)	1(1)	..	..	1	..	..	8
Dysentery (Bacillary) .. ..	..	2(1)	..	2(2)	2(1)	..	1	..	7
Encephalitis .. ..	1	..	..	..	..	..	..	..	1
Filariasis .. ..	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice .. ..	..	..	..	..	..	..	..	..	..
Hydatid .. ..	..	..	..	..	..	..	..	..	..
Infective Hepatitis .. ..	46(24)	29(9)	..	9(6)	..	7(2)	1	..	92
Lead Poisoning .. ..	..	..	..	..	..	..	..	..	..
Leprosy .. ..	..	..	3	..	..	..	..	..	3
Leptospirosis .. ..	..	..	1	..	..	..	..	..	3
Malaria .. ..	..	..	..	..	..	..	..	..	..
Meningococcal Infection .. ..	2(1)	1(1)	..	..	..	1(1)	..	..	4
Ophthalmia .. ..	..	..	..	..	..	..	..	..	..
Ornithosis .. ..	..	..	..	..	..	..	..	..	..
Paratyphoid .. ..	..	..	..	..	..	..	..	1	1
Plague .. ..	..	..	..	..	..	..	..	..	..
Pollomyelitis .. ..	..	1	2	1	..	1(1)	..	..	5
Puerperal Fever .. ..	2(1)	..	1	..	..	..	..	..	3
Rubella .. ..	..	28(13)	..	24(10)	8(1)	..	..	..	56
Salmonella Infection .. ..	..	..	..	..	..	..	..	..	..
Scarlet Fever .. ..	8(6)	18(15)	2(2)	10(10)	3(2)	2	..	..	43
Smallpox .. ..	..	..	..	..	..	..	..	..	..
Tetanus .. ..	..	1(1)	2(1)	..	..	..	..	..	3
Trachoma .. ..	..	..	..	..	1	..	..	..	1
Trichinosis .. ..	..	..	..	..	..	..	..	..	..
Tuberculosis .. ..	20(20)	10(8)	10(7)	1(1)	10(8)	2(1)	3	..	62
Typhoid Fever .. ..	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne) .. ..	..	..	2(1)	..	..	..	..	..	2
Typhus (Louse-borne) .. ..	..	..	..	..	..	..	..	..	..
Yellow Fever .. ..	..	..	..	..	..	..	..	..	..

<sup>1</sup> Figures in parentheses are those for the metropolitan area.



Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney, to whom application for enrolment should be made. Telephones: BU 4497-8. Telegraphic address: "Postgrad Sydney."

## Royal Australasian College of Surgeons.

### FACULTY OF ANÆSTHETISTS.

#### Primary Examination for the F.F.A., R.A.C.S.

A PRIMARY EXAMINATION in anatomy, physiology, pharmacology and pathology will be conducted in Melbourne, Sydney and Dunedin in September, 1957.

Written papers will be held simultaneously in the three cities on Thursday and Friday, September 5 and 6, 1957. The examiners will visit the three centres for the purpose of conducting the viva voce section of the examination.

The examination is open to graduates of not less than one year's standing of an approved medical school.

Candidates must submit evidence of their qualification and of the date of acquirement thereof.

Forms of application for admission to the examination may be obtained from the Secretary, Faculty of Anæsthetists, Royal Australasian College of Surgeons, Spring Street, Melbourne.

When entering for the examination, candidates must state whether they desire to appear before the Board of Examiners in Melbourne, Sydney or Dunedin.

The fee for admission or readmission to the examination is £26 5s., plus exchange on cheques drawn on banks outside Melbourne. The fee must be forwarded with the form of application so as to reach the Secretary at his office not later than July 25, 1957.

It is stressed that entries close at the Faculty office in Melbourne on July 25, 1957, and that late entries cannot be accepted.

#### PRIMARY EXAMINATION FOR THE F.R.A.C.S.

A PRIMARY EXAMINATION in anatomy (including normal histology) and applied physiology and the principles of pathology will be conducted in Melbourne, Sydney and Dunedin in September, 1957.

Written papers will be held simultaneously in the three cities on Thursday and Friday, September 5 and 6, 1957. The examiners will visit the three centres for the purpose of conducting the viva voce section of the examination.

The examination is reciprocal with primary examinations for Fellowship of the Royal College of Surgeons of England, the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland and the Royal Faculty of Physicians and Surgeons of Glasgow.

Each examination is open to graduates of not less than one year's standing of a medical school approved by the Council of the College for the purpose.

Candidates must submit evidence of their qualification and of the date of acquirement thereof.

Forms of application for admission to the examination may be obtained from the Secretary, Royal Australasian College of Surgeons, Spring Street, Melbourne.

When entering for the examination, candidates must state whether they desire to appear before the Board of Examiners in Melbourne, Sydney or Dunedin.

The fee for admission or readmission to the examination is £26 5s. (plus exchange on cheques drawn on banks outside Melbourne). The fee must be forwarded with the form of application so as to reach the Secretary at his office in Melbourne not later than July 25, 1957.

It is stressed that entries close at the College office in Melbourne on July 25, 1957, and that late entries cannot be accepted.

## Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Frith, Mary Eileen, M.B., B.S., 1954 (Univ. Sydney), Railway Street, Teralba, via Newcastle, New South Wales.

Nowak, Jan Teodor, registered in accordance with the provisions of Section 17 (1) (c) of the *Medical Practitioners Act, 1938-1955*, 27 Talara Road, Gymea, New South Wales.

Vince, Stephan, registered in accordance with the provisions of Section 21 (3) of the *Medical Practitioners Act, 1938-1955*, 20 Wood Street, Lane Cove, New South Wales.

Wouters, Labora Marianne, registered in accordance with the provisions of Section 21 (b) of the *Medical Practitioners Act, 1938-1955*, 20 Kent Road, Rose Bay, New South Wales.

## Deaths.

THE following deaths have been announced:

JACKS.—Hermann Jacks, on April 1, 1957, at Melbourne.

HILLIARD.—Richard Hilliard, on April 8, 1957, at Sydney.

## Diary for the Month.

APRIL 23.—New South Wales Branch, B.M.A.: Ethics Committee.

APRIL 24.—New South Wales Branch, B.M.A.: Branch Meeting.

APRIL 24.—Victorian Branch, B.M.A.: Branch Council.

APRIL 26.—Queensland Branch, B.M.A.: Council Meeting.

MAY 1.—Victorian Branch, B.M.A.: Branch Meeting.

MAY 1.—Western Australian Branch, B.M.A.: Branch Council.

MAY 1.—South Australian Branch, B.M.A.: Council Meeting.

## Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

## Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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